EDITORIAL
DOMESTIC ENGINEERING

Whole No. 1435 CHICAGO, JUNE 12, 1920 Vol. 91, No. 11

A YEAR OF ACHIEVEMENT.

THE past year has been one of the most constructive periods in the history of the National Association of Master Plumbers. Led by an administration of unusual executive ability, aided by a most able, forceful directorate, and supported by a host of members throughout the country, real work has been done. Those who have sacrificed their time, given their best efforts and proved their devotion to the cause, have earned the hearty congratulations of the craft. The inspiration they have given us should stimulate us to carry on the work during the coming administration with greater determination than ever before.

LOOKING AHEAD.

HOW many men achieve their ambition in the business world? It depends on the individual and the field he is working in. The bank clerk may realize his ambition when he becomes president of his institution; the boy in the shoe shining parlor when he owns his own place; the farm hand when he has a farm of his own. Ambitions can never be realized, however, unless backed by initiative. There must be determination, planning and thriftiness, to reach the goal.

The business man who wishes to get ahead must be like the crack rifleman, who becomes an expert by constantly shooting at something. In the natural course of things, he will miss occasionally, but mistakes should not be a deterrent, but rather a stimulant to make sure of hitting the bullseye the next time. No man ever fully achieved his desires, so that life, after all, is a series of chapters that is never completed. In approaching the goal, therefore, the aim should be to make each succeeding chapter better than the last.

The plumbing and heating contractor has partly achieved his ambition in opening his own place of business. He has spent many valuable years getting the proper training, and the chances are that he will remain in the plumbing and heating profession for life. With the realization that he is not in business for a day, a month, or a year, he should bend every effort to improve himself, to build his business on a sound foundation, and to help his profession by participating actively in its progress. Within the prescribed "three score years and ten" there is so much to be done that every day counts, and every contractor should give most careful consideration to his plans for the future, in order that, late in life, he can look back on a record of constructive work.

The plumbing and heating contractor may profitably ask himself these questions:

Am I better off than I was five years ago?

How can I be sure of being farther ahead five, ten or twenty years from now?

No man knows better than himself what his weaknesses are, and he makes a fine start when he commences to correct them. His business may not be progressing substantially because of certain things he is **not** doing. If others in his field are using forceful methods of getting business, their example is worth following, as success is proof of the worth of any plan. Salesmanship is not necessarily a birthright, neither is the ability to carry out good showroom displays or write circular letters or newspaper advertisements. All can be learned by close application to the subject and considering it part of one big plan.

The man who looks ahead, gets ahead.

INCREASING SALES AND PRODUCTION.

NO country can prosper unless a constant effort is made to increase both sales and production. The more we increase sales, the more we must increase production to supply the demand. The more we increase production, the more we can pay those who produce, and the more they receive in wages the more they can spend. The more they can spend, the more we can sell and so it goes around and around the spiral of prosperity.

Without intense selling and intense production, business cannot grow and people cannot prosper. Both China and India have great natural resources. They have the people. They could be as rich and prosperous nations as our own. But they have not given as much attention to selling and producing as we have. As a result there are very few indeed who would prefer those countries to our own.

Only by selling more and producing more can any nation hold the lead in the commerce of the world. To increase prosperity all that is necessary is to work a little harder at one's job and it matters not what that job may be.

SAFE PRACTICES *for* FACTORY PLUMBING

Drinking Water, Wash and Locker Rooms and Toilet Facilities Recommended by the National Safety Council

In Three Parts

(Continued from Page 384 in the May 29th Issue.)

Part 2.

Light and Ventilation.

It is essential that the room be open to outside light and air. Sufficient window area, therefore, should be provided to afford adequate light and ventilation. It is also important that artificial light be provided and the fixtures so installed that they thoroughly light all portions of the room. Lighting fixtures should be mounted near ceiling out of reach of workmen.

Heating.

It is of particular importance that all wash and locker rooms should be kept comfortably heated. The heating pipes or radiators should be so installed as to give ample space below and behind them for cleaning.

Cleaning.

A permanent hose connection should be provided for the purpose of flushing and cleaning the rooms, also a slop sink for the use of the janitors in caring for equipment. Special men should be delegated to take care of all wash and locker rooms. For large installations the full time of one man may be required for keeping the room and fixtures in a clean and sanitary condition. Where the installations are small, one man may probably take care of several rooms. In large plants it is a good plan to have a chief janitor who is responsible for the cleanliness and proper care of all sanitary equipment.

Wash Room.

The wash room, if placed within a shop building, should be enclosed. The floor, and walls to a height of at least six inches, should be made of concrete or a non-absorbent material. It is advisable that the wall to a height of five feet be of concrete or other material impervious to water. Floors should slope toward a drain so that the room may be flushed out with water. The walls, ceilings, and partitions should preferably be light in color to give a neat appearance, increase illumination, and facilitate cleaning.

Fixtures.

Basins or Troughs: Experience has clearly shown that wash basins or bowls for common use should not be installed for factory employees. The wash basin with a stopper is insanitary; such bowls when filled with water for washing become dirty even if used once and are apt to be the cause of transmission of disease from one employee to another. Wherever stationary individual basins are in use no stoppers should be provided and the faucet should be of a type that will permit employee to wash in a flowing stream of water.

The most desirable type of washing fixture for plant usage is a trough over which are placed hot and cold water pipes with faucets for washing, spaced not less than 24 inches apart, thus giving each man sufficient space for washing without splashing his neighbor. Double width troughs having faucets facing each side are in common use. Many companies place the single width troughs back to back; this arrangement providing a partition between washers on the two sides. The troughs or basins should be made of porcelain enameled iron or other impervious material which may be kept clean easily.

Type of Faucet: Both hot and cold water should be provided for each fixture and it is advisable to have one mixing faucet at each wash place rather than two separate faucets. The use of the mixing faucet enables each workman to regulate his washing water to any desired temperature. Some companies have found that a control valve in the mixing pipe operated by a foot treadle results in quite a saving in water.

The use of a small spray or shower head at wash basins and troughs is fast gaining in popularity. The spray heads should be at a sufficient height above trough for one conveniently to wash head, arms, and shoulders under the shower.

The hot water valve should always be on left, cold water on right; this uniform arrangement is suggested to reduce the probability of workmen becoming scalded should they open the wrong valve. Many companies also use valves which are plainly marked "Hot" and "Cold." Wherever practicable, automatic thermostatic control should be installed in the main hot water supply pipe to limit the maximum temperature of the water.

Liberal Number of Fixtures Needed.

In some plants the mixing valve is placed in supply pipe at end of wash trough and regulates the temperature of water for all faucets. This arrangement is not so satisfactory as a mixing faucet at each wash place because all workmen may not desire water of the same temperature. Also, many workmen like to rinse their hands and face with cold water after having washed, and with one mixing valve at supply end of pipe this is, of course, impossible.

The number of washing faucets for workmen depends somewhat on the class of work performed. For mines, foundries, and other occupations where workmen will ordinarily require more time in washing, one faucet should be supplied for each six employees. For ordinary plants one faucet for every ten employees may be sufficient. Where shower baths are provided, these may be substituted in part for the faucets. In other words, fewer faucets may be installed if showers are provided in connection with the wash room. To prevent loss of time from waiting, it is economical to provide a liberal number of washing fixtures; this is also true of water closets and urinals. Many states now have laws with provisions covering such installations and these of course should be complied with.

Showers.

Many of the larger companies, especially in the steel and mining industries, now provide shower baths for workmen. In occupations where the workmen necessarily become dirty or covered with perspiration, and also where exposed to poisonous dusts—as in paint manufacture—the installation of shower baths is strongly recommended, and their use should be encouraged. A small number of showers in connection with wash rooms even in comparatively clean operations such as machine or woodworking shops, may be desirable though not considered essential.

Stalls. Each shower should be enclosed in a stall to encourage use and prevent splashing of other workmen. The showers should, if possible, be so arranged that openings to compartments will face a wall with an aisle-way along wall leading to the several compartments; or else a partition may be built immediately in front of the battery of showers. This will give more privacy to the users. Some of our member companies' specifications for showers call for two compartments, one for a dressing room and one in which the shower is placed.

The dimensions of stalls should be about 3 by 3 ft. and the height of partitions not less than 6 ft. with not less than 12 inches clearance at bottom, so that they may be flushed out. A removable wood mat is often provided in each stall and in front of showers as a safe footing for bathers.

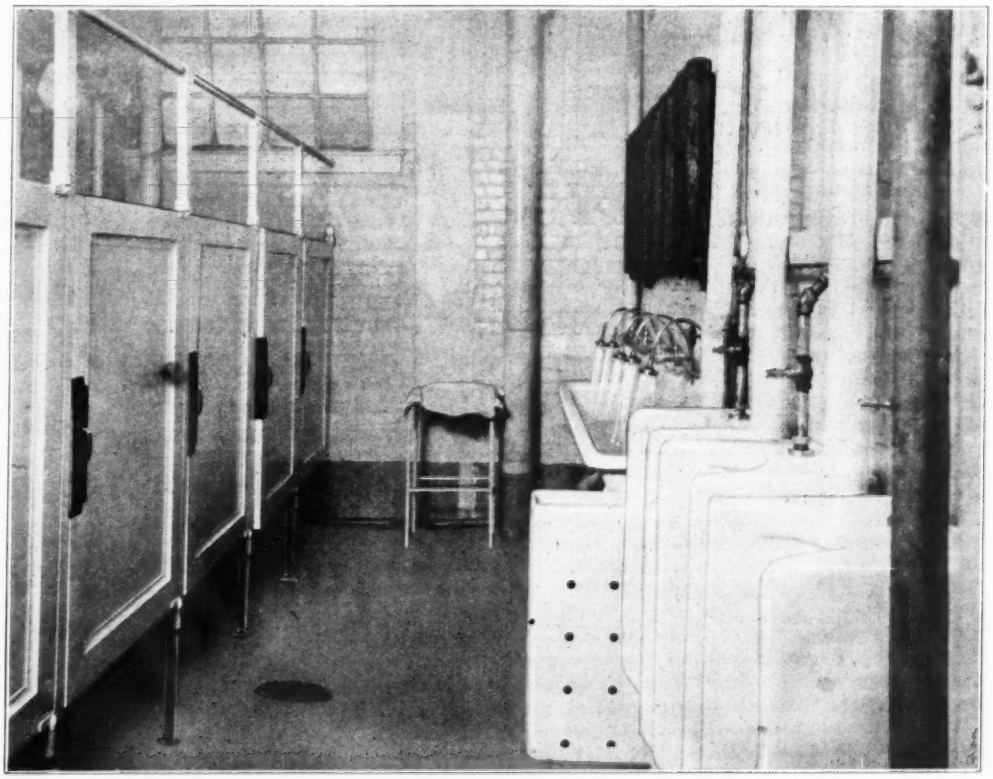
A desirable construction is to have the floor of showers slope to the back, one-half inch to the foot, and along back wall provide a concrete trough the entire length of all stalls in battery, with a floor drain in every third stall, or on about 12-ft. centers. A curb wall 4 inches high should then be run around the shower stalls to keep water within the enclosure.

Control Valve: Each shower should be provided with a hot and cold water mixing faucet, or with a valve in each supply line so that users may regulate the temperature of water. The regulating valve or valves should preferably be placed on a side wall where it may be easily reached from outside the stall. The supply lines to shower baths should be placed so as to avoid the possibility of persons coming in contact with the hot pipes.

The number of showers to be installed depends upon the nature of the work performed. Standards in use range from one shower for every five men (on same shift) to one for every fifty men.

Towels.

The use of roller towels or any towel for common use should be prohibited. Some employers launder towels free of charge for their employees; where there is a plant laundry, some have found it satisfactory to launder working clothes also, at a minimum charge. Where paper towels are furnished, receptacles for the soiled towels should be provided so that the room will not become littered with soaked paper.



Courtesy, B. F. Goodrich Rubber Co.

A Sanitary Toilet Room. Plenty of Light, Clean and Well Kept. Note the Washing Facilities, Supply of Towels and the Metal Receptacle for Soiled Towels.

Locker Room.

Some companies place the washing fixtures and lockers in separate rooms while others have the wash troughs arranged between rows of lockers or else at ends of locker rows. Where the washing fixtures and lockers are in the same room, they should be so arranged that employees washing will not splash others who are dressing.

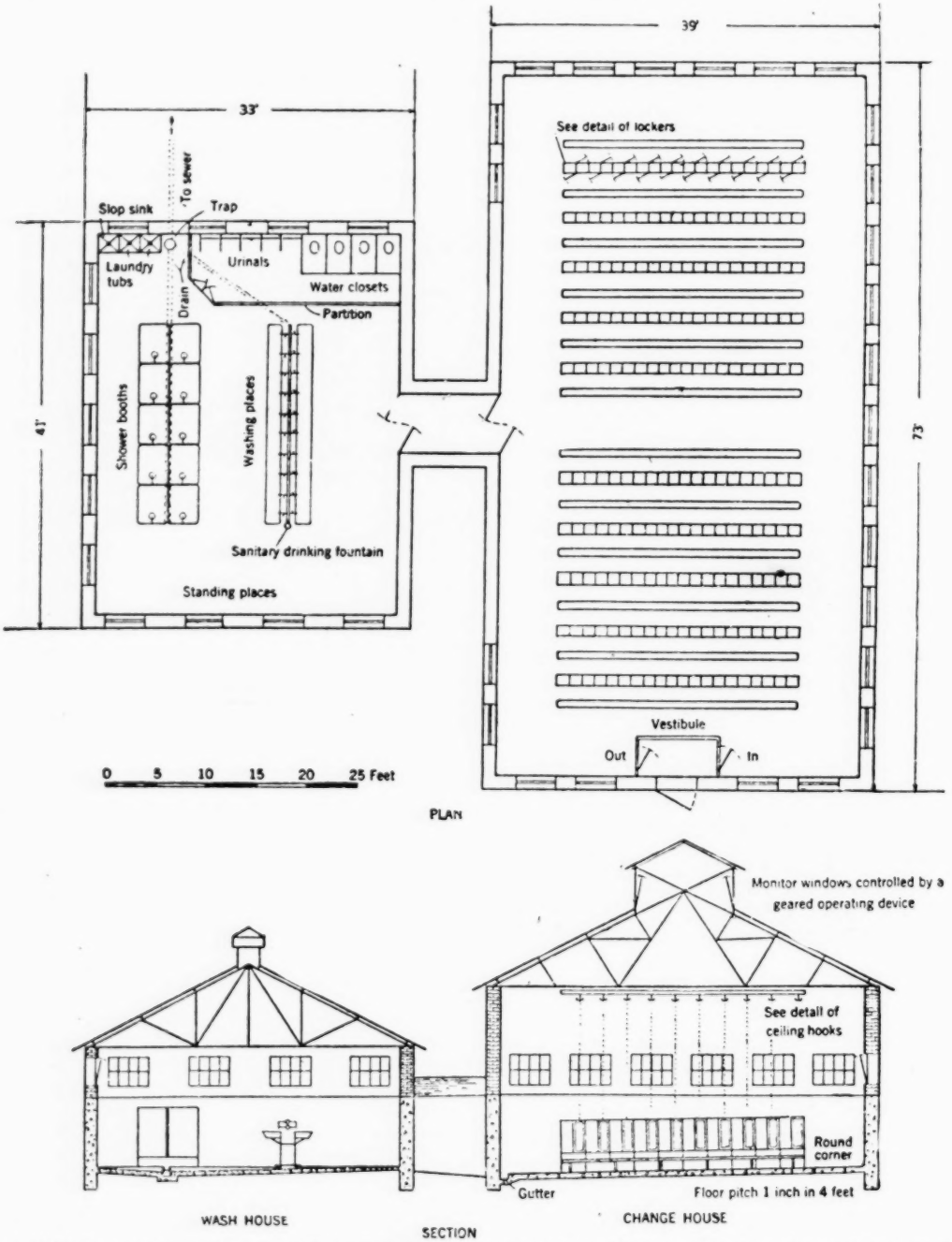
Dressing rooms in which are placed clothes hangers and a hat rack for each employee are in use by some companies. This is apparently satisfactory where only the coat and hat are removed. The practice of supplying individual lockers, however, is usually considered better.

Lockers.

Lockers should be of steel construction with a good coating of paint or enamel for protection against rust. They should be of sufficient size to accommodate the workmen's clothes; 12 by 15 by 36 inches is considered the minimum for each employee; many employers, however, supply much larger ones. Lockers should have proper ventilation and should be at least four inches off the floor to permit flushing the room without wetting the contents of the lockers.

Installation of a bench board about 10 inches wide immediately along front side of lockers is advisable as this provides a seat for workmen while changing clothes. In some plants a bench is provided between each two rows of lockers. Each locker should be supplied with a lock, preferably a combination or a keyless one, so that workmen will not have to carry a key. Employers should retain the privilege of inspecting and cleaning lockers.

(To be Continued.)



Well-Planned Wash and Change House for Mines, Suggested by U. S. Bureau of Mines. The Advantage Claimed for This Arrangement is that Moisture from the Showers and Washing Fixtures is Kept Away from the Change House Where the Clothes Are Dried Out.

Watch out for our Convention number—June 26th.

COMPARATIVE EFFICIENCY *of* VENTED HALF-S TRAPS *and* NON-VENTED, ANTI-SIPHON, NON-SIPHONING *or* RE-SEALING TRAPS

An Exhaustive Investigation Conducted by A. E. Hansen, Sanitary Engineer, New York, for The Master Plumbers' Association of New York City

THE research work conducted by the Master Plumbers' Association of New York City in an effort to prove the relative values of so-called anti-siphon traps, when used in unvented drainage systems, and of the vented half-S traps, is now completed.

The work was directly in charge of A. E. Hansen, sanitary engineer of New York, and was prompted by a revision in the sanitary code of New York City which would violate the accepted principles of sanitation of almost half a century by permitting the use of patented trap devices in place of the vented system.

The Master Plumbers' Association accordingly went back to fundamentals to find out definitely whether or not the vented trap is necessary. A five-story loft building at 366 West Broadway, New York, was selected for actual experiments under actual working conditions and exhaustive tests were publicly conducted over a period from October 1918 to the present time.

Mr. Hansen's report covers not only every detail of this work, but includes his findings in a thorough investigation of all the experimental, research and test work of the past three-quarters of a century, which figured in the development of present day sanitary plumbing.

The numerous improvements and developments in devices intended to prevent the passage of sewer air in the wrong direction are dealt with in detail, from the time the first definite recommendations were made to provide traps and waste pipes with vents in 1875.

He points out the errors and prejudices which influenced many of these tests and investigations and says, that his survey of them shows that those made by disinterested and competent men invariably resulted in reports favoring the use of venting and the elimination of unvented anti-siphon traps, except in the cases of Rochester, Holyoke, Springfield and Richmond. The apparatus used for testing in these instances, says the report, was not an actual plumbing installation, differing therefrom so completely that it became merely a laboratory apparatus capable of determining the relative siphonage resisting qualities of anti-siphon traps as compared with each other, but not fit to determine the advisability of the use of anti-siphon traps in place of vented half-S traps.

The reports on tests favoring the use of anti-siphon traps, says Mr. Hansen, were made by Colonel George E. Waring, J. Pickering Putnam and H. J. Luff, all of whom were patentees of anti-siphon traps.

Mr. Hansen's report pronounces the vented system of plumbing the only available apparatus capable of properly withstanding siphonage of traps and back pressure, and condemns the anti-siphon traps as weak and insufficient for general use in high grade plumbing work.

Mr. Hansen's test, further, were made with special attention to the value of the "Geco" anti-siphon trap which is the only one approved by the New York Board of Standards and Appeals for use under the amended code in that city.

Of the tests, of this device, made by the New York Board of Standards and Appeals, and upon which the excuse for amending the code is based, Mr. Hansen has the following to say:

"On August 13, 1918, the New York City Board of Standards and Appeals held a public hearing in its office in the Municipal Building, New York City, on certain proposed changes in the plumbing code, the most vital of which would permit the installation of unvented so-called anti-siphon traps, a substitute for the vented ½-S or S traps which had been in use in New York City for upward of 40 years and had been found entirely satisfactory and as nearly perfect as any apparatus can be.

It was thought at that time, and it has apparently been confirmed since then, that the Board of Standards and Appeals had in mind the approval of just one particular patented anti-siphon trap, namely the "Geco" also known as the "Cody" trap. This is the only trap approved to date, a year and a half after the initial hearing, although there are many other anti-siphon traps on the market, which will compare favorably both as to resistance to siphonage and back pressure, and as to self-cleaning, with the one approved.

It developed during the course of the hearing on August 13, 1918, that tests of the trap for siphonage resisting qualities had been made by the trap manufacturers in the presence of representatives of the Board of Standards and Appeals, but that no other interested parties such as architects, engineers, builders, master or journeyman plumbers had witnessed these tests. A demand was made of the board that a public test be held; at the suggestion of the chairman this was arranged and was conducted by the trap manufacturers, informally in the absence of the board on the same date at 3 p. m. at 30 City Hall place.

"The general testing apparatus employed was erected on the rear fire escape and had no connection with the plumbing system; the water used in the tests was discharged on an adjoining roof.

"The apparatus consisted of a vertical 1½-inch iron screw pipe about 50 ft. long, to the upper end of which was attached a barrel standing on the 6th floor fire escape landing. This barrel was provided with water from the city main. A quick closing gate valve was installed on the 1½-inch pipe about 10 ft. below the bottom of the barrel, and about 2 ft. below the valve a 1½-inch Y branch and 45-degree elbow to which the Cody trap was attached.

"For purposes of testing, the barrel was filled and water discharged therefrom into the 1½-inch stack by opening the 1½-inch quick closing gate valve for three successive periods, said by the manufacturer's representative, who operated the valve, to be of 3 seconds duration with 5 second intervals. No attempt was made by the operator to time himself by even an ordinary watch, much less a stop watch. I am convinced that the periods of flushing did not exceed 3 seconds each.

"The rate of flow through the 1½-inch pipe was not established, nor did the operator endeavor to determine it; but it is certain that the pipe remained completely filled with water during the tests above the Y branch, and that therefore no vacuum existed within the vertical pipe itself. The partial vacuum in the branch trap connection was merely induced by the column of water passing down the main line. No attempt was made by the operator to determine the degree of vacuum.

"The test should have been made under conditions of flow resembling those occurring in actual plumbing installations, namely with a partially filled main. A vacuum would then have been created within the main, and the siphonic influence on the trap would have been considerably greater in consequence.

"The use of a 1½-inch vertical riser used as a waste pipe is against the rules of the plumbing code which prescribes not less than a 2-inch pipe, which must be open at its top, and not closed as was naturally the case.

"The free discharge of the water from the open end at the foot of the 1½-inch stack does not in any way resemble actual conditions. The back pressure, which would have developed in the stack, had it been connected in the usual manner by a horizontal line to the house drain, was entirely absent and thereby created conditions of air pressure in the stack which differed essentially from those of actual plumbing installations. The absence of back pressure naturally failed to show the 'blowing' of the trap which occurs in unvented plumbing stacks, connected by horizontal lines to the house drains.

"To the trained engineer the testing equipment and method of operation used by the manufacturers and apparently accepted by the New York City official, seems naturally in view of all these defects, most unscientific, inconclusive, and bordering on the ridiculous. It is inconceivable that the greatest city in the world should have attempted to determine the reliability of an apparatus which is intended to protect mankind against foul air produced from the decomposition of its own waste products, by means of a testing apparatus erected on a fire escape, entirely disconnected from the plumbing system, completely different from actual plumbing practice, not even complying with the plumbing code, and operated in a manner similar to that used by children in playing with toys."

The report also contains tabulated data showing the present conditions in other cities of the country with regard to the general use of unvented anti-siphon and vented bent tube or ½-S traps. This was compiled from replies to inquiries sent to the chief Plumbing Inspectors of those cities having an estimated population of over 35,000 inhabitants.

The total population of the 107 cities answering the inquiries was 22,963,000 which covers about 77 per cent of the total population of the total number of cities to which the inquiry was sent.

An analysis of the returns shows that in 81 per cent of the number of cities, and in 84 per cent of the total population unvented anti-siphon traps are not permitted for general use in new buildings.

In about 40 per cent of the number and about 24 per cent of the population anti-siphon traps are not allowed, whether vented or unvented, for general use in new buildings.

In about 4 per cent of the number and in about 4 per cent of the population, unvented anti-siphon traps are permitted, but with decided limitations.

In about 17 per cent of the number and about 11 per cent of the population the general use of unvented anti-siphon traps is permitted.

In about 17 per cent of the number and about 11 per cent permitted, the maximum allowable distances from the traps to the soil or waste stacks varies from 18 inches to 25 ft.; in the case of Macon, Ga., there is no extreme limit.

In not a single city, except New York City, is only one trap reported approved to the exclusion of all others.

In not a single city is the 1½-inch or 2-inch "Geco" trap, approved by the Board of Standards and Appeals of New York City, reported approved or in use.

Mr. Hansen's report of the tests conducted by him, at 366 West Broadway, New York, will be published in serial form, the first installment of which follows herewith:

Report to The Master Plumbers' Association of New York City on the Investigation of the Comparative Efficiency of Vented Half-S Traps and Non-Vented Anti-Siphon, Non-Siphoning or Resealing Traps.

In accordance with your request, I have thoroughly investigated by research and actual experiments the comparative values of unvented, so-called anti-siphon traps (especially the "Geco" trap) and of vented ordinary ½-S traps, with reference to their ability to withstand siphonage and backpressure. These studies extended over a period from October, 1918, to the present time. I beg to report on them as follows:

I. Historical.

In about 1840 the first plumbing fixtures were introduced in Professor Longfellow's home in Cambridge, Mass. They included water closets and a kitchen sink. The historian fails to state what attempts were made to exclude sewer air, described as "Effluvia" from the Professor's house.

In 1856, Charles H. Bush was granted a U. S. patent for improvements to the "Bell Stench trap"; the application states: "The inventor does not claim as new in themselves, the perforated plate or grating, and bell or cup with surrounding chamber and central exit pipe, arranged as described to form in combination a stench trap for sinks, as such is old and commonly known as the bell stench trap."

This "Bell stench trap" was an ordinary bell trap, placed directly against the bottom of the kitchen sink underneath its strainer outlet.

In 1860 Alfred Carson, of New York, introduced an improvement on the bell trap by attaching a miniature septic tank with a hanging baffle to the underside of a plumbing fixture.

W. E. Hatfield, of Newark, appears to deserve the questionable credit of first applying in 1862 the principle of a counterweighted flap valve, enclosed within a tight box, to the waste pipe of a plumbing fixture, which was modified in 1868 by F. H Williams by the substitution of a spring operated concave disk.

In 1872 Thomas Smith, of New York, introduced a hinged valve trap mechanism designed to "check wind blasts from blowing up from the sewer."

During the years 1872 to 1875, the bent pipe trap, now designed as the ½-S or S trap, seems to have made its first appearance, but who originated its use or adapted it from the old English "D" trap, is not stated in any of the works which I have been able to consult. I find, however, that 1875 was the year in which the first definite recommendations were made to provide such traps with vent pipes. The 1875 to 1876 report of the Board of Health of the City of Brooklyn states that "Running traps for basins, sinks, and tubs are unsafe and should never be used without a vent pipe from their highest point to the open air."

Colonel George E. Waring also recognized in 1878 the necessity of venting traps as well as waste pipes, by saying:

(Continued on Page 521.)

A WELL ARRANGED PLUMBING SHOP *in a* TOWN *of* 10,000

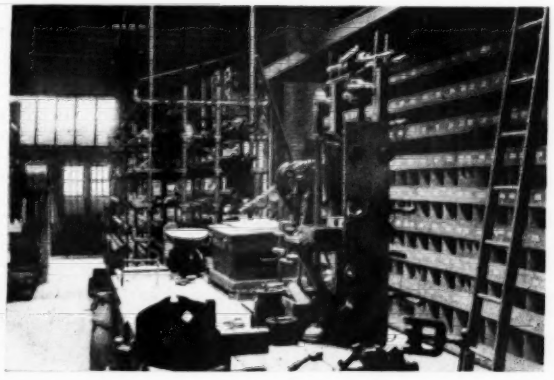


Fig. 1. Back End of Shop of Fred Finder, Champaign, Ill.

Fred Finder, of Champaign, Ill., Pays Particular Attention to the Back End and Arranges It for Convenience and Economy

THE keynote of the April 10th issue of "Domestic Engineering" was "the back of the shop needs watching," and this number emphasized that nothing is gained if profits coming in the front door are allowed to slip out the back way, because of general neglect in the conduct of this department. Particular mention was made of the necessity for the proper arrangement of benches and bins, use of good tools, advantage of proper lighting, etc., etc. This issue aroused much interest among our subscribers, several of whom took the trouble to prepare rough sketches of the backs of their shops. Among those received was that of Fred Finder, of Champaign, Ill., to whom we are indebted for the accompanying illustrations. They show, generally and in detail, a well arranged shop and one having some features that will undoubtedly be of interest to other master plumbers who may be giving the back end of the shop more than passing attention.

Fig. 1 is a snapshot of Mr. Finder's shop as it appears from the showroom or looking from the left end of Fig. 2.

Shop Has Large Skylight.

In Fig. 1 the work bench will be seen in the foreground, its convenient location being shown in Fig. 2. It is adjacent to the bins and pipe rack, and directly over the bench is a 5x9 ft. skylight, which, aided by the windows in the back end, light up the place splendidly.

On the right of the bench will be seen a rack for die stocks, the rack consisting of two wooden uprights nailed against the side of the bench. These uprights are 2x6 inches extending from the floor, and hooks are spaced conveniently apart for the stocks. A shelf is also provided under the rack for dies, taps, etc. Adjoining the rack is a 1-inch pipe run at right angles for holding the pipe cutters. These are convenient to the bench and the journeymen are instructed to use the racks and not leave tools laying around on the floor or bench.

Referring to the bench in Fig. 2, it will be noted that there are three vises at different corners, and a pipe bender near the pipe rack. The pipe bender is on a post, the bottom of which extends 3 ft. below the level of the ground. The under part of the bench is used for miscellaneous tools, the space on the floor being utilized for lead, solder, etc.

On the right of Fig. 1 we see the fittings bins, used for cast iron and malleable. It will be noted that each bin is labeled, white cards being used with black letters. The bins are mostly 1 ft. square, inside dimensions, with a balcony on top for the storage of pipe covering, hair felt, etc. A box for scrap metal is at the far end. Continuing along this side, according to the lower part of Fig. 2, we find a space provided on the wall for ladders, hose, etc., while the top of the coal bin is used to store range boilers, closet combinations, etc.

Well Built Pipe Rack.

In the center of the shop we see a well constructed pipe rack, which is brought out in detail in Fig. 3. It is built

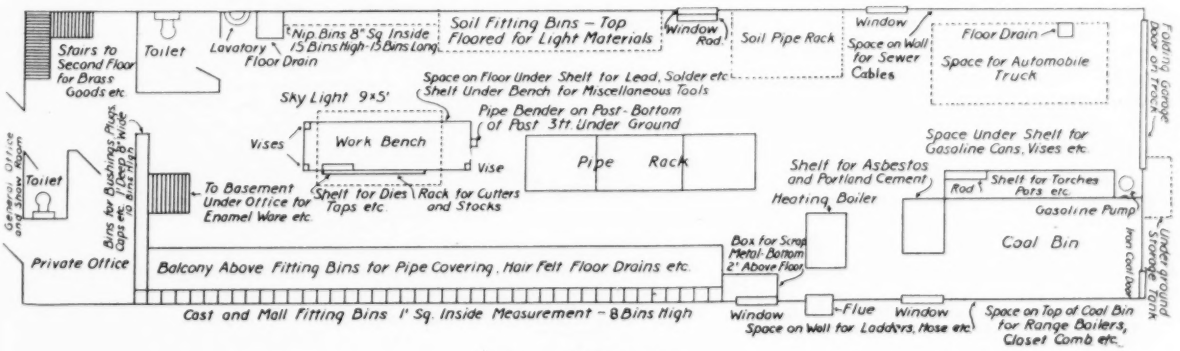

Stairs to Second Floor for Brass Goods etc.
Toilet
Lavatory
Floor Drain
Nip Bins 8" Sq. Inside 15 Bins High 13 Bins Long
Soil Fitting Bins – Top Floored for Light Materials
Window
Rod
Soil Pipe Rack
Window
Space on Wall for Sewer Cables
Floor Drain
Space for Automobile Truck
Folding Garage Door on Track
Space on Floor Under Shelf for Lead, Solder etc.
Shelf Under Bench for Miscellaneous Tools
Sky Light 9×5'
Pipe Bender on Post - Bottom of Post 3ft. Under Ground
Vises
Work Bench
Vise
Pipe Rack
Space Under Shelf for Gasoline Cans, Vises etc.
Shelf for Asbestos and Portland Cement
Rod
Shelf for Torches Pots etc.
Toilet
To Basement Under Office for Enamel Ware etc.
Shelf for Dies Taps etc.
Rack for Cutters and Stocks
Heating Boiler
Gasoline Pump
Bins for Bushings Plugs Caps etc. 8 Deep 8 Wide 8 High
Private Office
Box for Scrap Metal Bottom 2' Above Floor
Coal Bin
Iron Coal Door
Underground Storage Tank
Balcony Above Fitting Bins for Pipe Covering, Hair Felt Floor Drains etc.
Cast and Malt Fitting Bins 1' Sq. Inside Measurement – 8 Bins High
Window
Flue
Window
Space on Wall for Ladders, Hose etc.
Space on Top of Coal Bin for Range Boilers, Closet Comb. etc.

Fig. 2. Plan of Shop.

in four sections, each section being 5½ ft. apart. Each compartment will hold 350 ft. of 2-inch pipe and 1,500 ft. of ¾-inch pipe and other sizes in proportion. The index to the figures is as follows:

1, Pipe fastened to ceiling.

2, 1¼-inch pipe.

3, 1¼-inch crosses.

4, 1¼-inch nipple and ell to lay up pieces of pipe 5½-ft. and longer.

5, 1-inch pipe slipped through crosses.

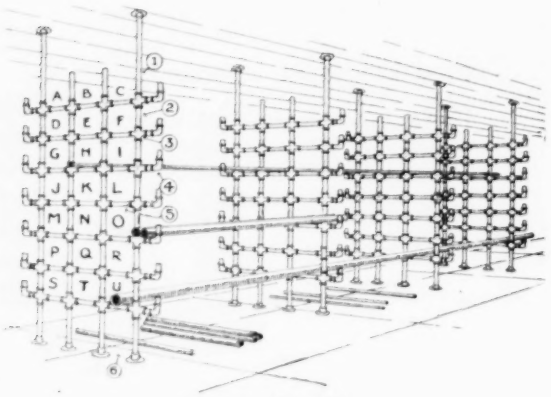


Fig. 3. Pipe Rack.

6, 1½-ft. space for pieces of pipe from floor to first length of pipe in rack.

A, ⅜ths galvanized; B, ⅛th black and galvanized; C, pump rod.

D, ½-inch galvanized; E, ¼-inch black and galvanized; F, 1¼-inch black.

G, ¾-inch galvanized; H, ⅜ths black; I, 1½-inch black.

J, 1-inch galvanized; K, ½-inch black; L, 2-inch black.

M, 1¼-inch galvanized; N, ¾-inch black; O, 2½-inch black.

P, 1½-inch galvanized; Q, 1-inch black; R, 3-inch black.

S, 2-inch galvanized; T, 2½-inch galvanized; U, 3½-inch and larger black pipe.

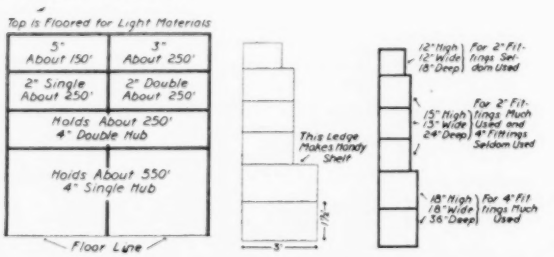

Top is Floored for Light Materials
3" About 150'
3" About 250'
2" Single About 250'
2" Double About 250'
Holds About 250' 4" Double Hub
Holds About 550' 4" Single Hub
Floor Line
This Ledge Makes Handy Shelf
12" High 12" Wide 18" Deep
For 2" Fittings Seldom Used
15" High 15" Wide 24" Deep
For 2" Fittings Much Used and 4" Fittings Seldom Used
18" High 18" Wide 36" Deep
For 4" Fittings Much Used
3'

Fig. 4. Left to Right, Front View of Soil Fittings Bin; End View of Soil Fittings Bin; Front View of One Section Soil Fittings Bin.

Under the first section of the rack, as shown in Fig. 3, pieces of black pipe shorter than 5½ ft. are stored, the other two sections being used for short lengths of galvanized pipe. Mr. Finder says that this practice enables him to get the odd pieces used up, and when he is looking for an odd size, it is not a difficult matter to find it or some piece that will fill the bill.

Referring again to Fig. 3, we find the soil pipe rack, soil fittings bins and nipple bins conveniently arranged on the side opposite the cast iron and malleable bins. The construction of these bins is brought out clearly in Fig. 4. This shows, from left to right, a front view of the soil pipe rack, an end view of the soil fittings bin, and one section of the soil fitting bins.

The soil pipe rack is constructed of 2x4's and ⅞th boards, and if heavier materials are used, comments Mr. Finder, the center studding is not needed. The top of the rack is floored for light materials. The rack will hold about 1,700 ft. of pipe, as shown in the illustration. The rack is 8 ft. wide and 8 ft. high.

There are thirteen sections of soil fitting bins, shown at the extreme right of Fig. 4, and all bins will hold not less than six fittings seldom used and from 12 to 18 fittings in frequent use. The sizes of the bins, and the fittings they hold, are explained in the drawing.

Truck Drives Into Shop.

Reference to Fig. 1 will show the rear entrance to the shop, which is on the main floor. Folding garage doors on track have been provided, and the truck can be driven into the shop, thereby facilitating the loading and unloading of materials. It will also be noticed at the rear that shelves have been provided for torches, pots, cement, etc.

This is a good example of a well arranged plumbing shop, so far as the back end is concerned, and in this particular case, the front is also well taken care of, as part of a sound business policy. Mr. Finder finds it profitable to conduct all departments systematically. He knows that it doesn't pay to have a good showroom and neglect taking good care of his stock. He keeps the back end neat and orderly, and the customer need never be afraid of falling over tools, pipe or fittings, should he have occasion to go into the shop. Appearances count in every business, says Mr. Finder, and it is also of great importance that the contractor consider how to save time and money by paying careful attention to the back end of his establishment.

NEWS OF THE WORLD.

A conference of representatives of more than sixty engineering organizations at Washington, June 4th, voted for the formation of what will be the largest organization of civil and technical engineers. Pending the final decision in favor of the plan by the organizations represented, a tentative organization, which will be known as the American Federated Engineering Societies, will function through the Engineering Council created during the war to co-operate with the Government on technical subjects.

Governor Smith, of New York, recently signed the New York State Bonus Bill, providing an amount to be distributed to each resident of the state who served in active duty in military or naval service of the United States at any time between April 6, 1917, and November 11, 1918, at $10 for each month of active service, but no person to receive more than $250.

In a summary of national conditions, "U. S. Bulletin," May 24th, states that manufacturers are handicapped by lack of raw materials, transportation and labor; high prices, lateness of season, transportation congestion and unsatisfactory crop prospects are checking retail buying; textiles and shoes are especially affected at present; loans are heavy with low reserve; no unemployment.

Returns specially compiled by the "Journal of Commerce," appearing in the issue of June 3rd, indicate that 979 companies, with authorized capital stock of $100,000 or over, were incorporated under the laws of principal states in May, representing $1,417,613,900. This compares with $748,683,500 in the same period a year ago, when approximately 600 companies were organized.

One of the large New York City department stores put into effect a reduction in the salaries of its employes on June 1st. The readjustment of the wage scale follows the country-wide cut in retail prices.

Put Great Men to Work for You

A Common-sense Editorial

By Bruce Barton

From "The Red Book Magazine"

CONSIDERING that it costs nothing, I am surprised that so few people have the great men of the world working for them. Personally I should hardly know how to get through a week without their help.

I am in a business that has no office hours; there is no one except myself to assign my work and see that it gets done. And frequently there are days when I kick against my boss and do not feel like doing any work at all. For such days I have discovered a remedy. I go to my desk a little early, and instead of starting at once to work, I pick up the biography of some great man and read a chapter out of the most interesting portion of his life.

After half an hour or so, I am conscious of a new feeling. My spiritual shoulders are straighter, my reluctance has disappeared. I say to myself: "How trivial is my task compared with the marvels he achieved!" I am on fire with his example, eager to make the day count.

The discovery that great men can be drafted for help in even the humblest office is not original with me. Many another has profited by it; Emerson, for example:

> I cannot even hear of personal vigor of any kind, great power of performance, without fresh resolution. We are emulous of all that men do. Cecil's saying of Sir Walter Raleigh, "I know that he can toil terribly," is an electric touch. So are Clarendon's portraits of Hampden, "who was of an industry and vigilence not to be tired out or wearied by the most laborious, and of parts not to be imposed upon by the most subtle and sharp, and of a personal courage equal to his best parts," and of Falkland, "who was so severe an adorer of truth that he could as easily have allowed himself to steal as to dissemble." We cannot read Plutarch without a tingling of the blood; and I accept the saying of the Chinese Mercius: "A sage is the instructor of a hundred ages. When the manners of Loo are heard of, the stupid become intelligent, and the wavering, determined."

There is in biography an antidote for almost every mood.

Are we discouraged? A half-hour with Lincoln, carrying patiently his great load, never once losing faith, makes us properly ashamed of ourselves.

Are we inclined to be afraid? It stirs new depths of courage in us to read of Stonewall Jackson, whose motto was, "Never take counsel of your fears."

Do we vacillate between two courses of action? There is in all literature no such warning against vacillation as the pitiful uncertainties of poor Cicero.

I would commend these willing helpers to every man who finds his task sometimes heavy beyond his individual strength. There is no limit to their service. The fact that I employ them does not keep them from working with equal efficiency for you. They answer at a moment's notice, and may be dismissed peremptorily without the slightest hurt upon their feelings.

In their companionship is the secret of mental and spiritual growth. It is fairly easy to be as great as our contemporaries. It is hard to lift ourselves by our own bootstraps to distinguished effort and achievement. But these great men any one of us may make his own contemporaries and companions if he will; and there is no danger that we will outgrow them.

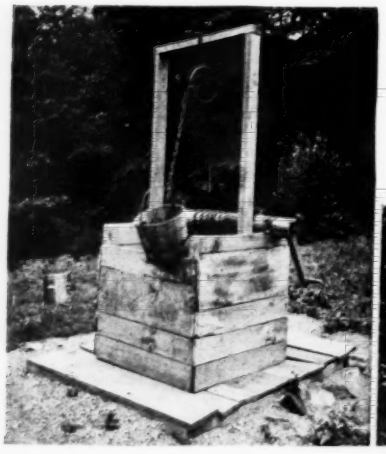
They are a daily stimulation to that which is best and most effective in us—the golden peaks of achievement along which even the least of us may climb a little nearer to his best ideals.

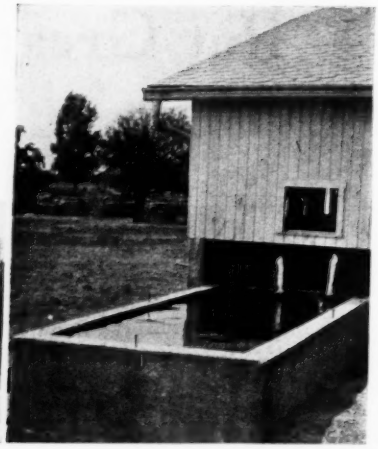
THE SALES MANAGER'S MESSAGE

On

How to Develop Water Supply Business

No. 1 *By* C. A. Kuebler





Editor's Note: The sales managers of all concerns manufacturing water supply equipment have been invited by "Domestic Engineering" to participate in a series of articles to assist the master plumber in the development of more pump business. They have been asked to word their messages to appeal to the master plumber who has not entered the water supply field, and to those already established in selling this line who wish to know how to get more business out of their community. Co-operation on the part of sales managers was sought because they are most actively in touch with the field and know, from day to day, how successful sales are being made—sales which mean bigger profits for the master plumber. The sales managers have been asked to enlist the co-operation of their salesmen by sending in practical suggestions for building bigger pump business, and ideas that have been carried out successfully by other master plumbers. "Domestic Engineering" feels that the importance of the farm field should be recognized by, and have the close attention of, those engaged in the plumbing industry in rural communities, not only because of pump sales but for the additional profits in bathroom fixtures, kitchen sinks, laundry equipment, heating apparatus, etc., that are bound to follow, once the master plumber has the confidence of the farmer.

BERNIER & WENMOUTH
Plumbing & Heating
684 N. Main St. Fall River, Mass.

April 24, 1920.

In reply to yours of the 22nd inst, as to the value of he pump business, there are a lot of things which we can say on the merits of the water system business.

Our idea is that it is the beginning of the plumbing business all over again. That the residence water system is only in its infancy. It is the foundation of the home.

From the water system comes the heating and plumbing, also the other devices which are on the market to save the daily grind of the housewife. To the farmer it is the one thing that will put the farming business on a higher basis than ever before. With a water system on the farm, the farmer can increase his production. It takes away the long hours that he used to put in to accomplish his day's work. He does not fear losses to his crops by long dry spells, no losses from his cattle because of infected waters and unsanitary surroundings. The best of all, it is the protection against what the country home dweller most dreads, and that is fire.

Our method in selling pumps is taking advantage of the wonderful up-to-date display advertising matter given us, and putting it where the people will see and read it, and have a demonstrator on our floor and following up our prospects, not boring them out by telling them that we simply sell pumps.

The pump does the rest. We keep the show room neat and clean and make it a place where people are glad to come. We have a man on the road to see the country home dweller and explain what a water system will do and enlighten them as to what it means as to labor-saving, comfort and dollars in the bank. We have in the firm a man who understands the construction of any kind of a water system whether for home or factory. Anything in the line of a water system from the smallest to the largest.

The reason the dealers are overlooking this great business is that they stick to the old-fashioned way of doing business. The man, who will succeed today, must be progressive. He must go out and show the people what is on the market for them to use. Put some young blood into your business. Don't wait for it to come to you. Go out and get it. The business is waiting for you.

The first of the series of articles on how to develop water supply business follows:

Opportunities for Increased Sales.

THE main trouble with dealers, who are not getting the maximum results in selling water systems in their territory, is this, that they have not put themselves in the proper frame of mind. Unless dealers who are in good fertile territories will consider the selling of water systems a specialty business they are not going to get very far. A dealer, who will sell three or four systems a year, cannot consider that a very important part of his business, but if he can sell fifty or one hundred systems a year, together with the other equipment goes along with it, he can consider that it is one of the mainstays of his business.

When a dealer is willing to follow suggestions as to how he can increase his water system business, it is not a difficult matter to build up his business in a short time. Here are a few things he should do:

1. Have an attractive display-room on a good street and arrange effective window displays, changing them about one or twice a month.

2. He should have a showroom demonstrator and also a portable demonstrator which he can carry on the back of a car and actually make demonstrations on the prospect's grounds.

3. He should make full use of the mails. Printed matter from water system companies is free.

4. He should make use of the local newspapers. Cuts are usually free.

5. He should use the "movies," in small towns especially.

6. He should keep in touch with the Electric Light Company's business manager; also keep in touch with the farm light plant dealers in his vicinity; also implement dealers, or any others who can be of service to him in the matter of furnishing information concerning prospects.

7. At least twice a year he should put on a campaign—sort of spring and fall opening affair—just like other merchants do and follow it up with an intensive campaign. Such a campaign focuses interest upon the local dealer, creates community interest and town talk.

8. Dealers should render the best of service and keep in mind continually their customers—the users of the pumps. They should feature their installations and make up attractive albums. Nothing is more convincing to a prospect than to show him his neighbor's installation. Every dealer in pumps should keep on the go and make use of every opportunity to better his salesmanship. After all he must finally close the job and he must learn to be a good closer.

Keeping After the Small Accounts

By A. B. Edgeworth.

Experience teaches that 85 per cent of all small accounts will be paid when due; about 10 per cent will be slow, but will be paid, and the other 5 per cent will cause trouble in collection.

After your 85 per cent of good-paying customers have paid you, next start to go after the slow 10 per cent with a letter such as follows:

"Dear Sir:—We beg to call your attention to your account for May, amounting to $23.56. Thinking that this has been overlooked, we ask you kindly to favor us with a remittance by return mail.

"Yours truly,

"Blank & Co."

If this letter fails to bring a response—and it is not often it does, for the reason that no customer wants to lose his account favor, if he can help it—send the following letter:

"Dear Sir:—On June 2nd we sent you a letter calling your attention to your May account, stating the same was past due and a remittance would be received with pleasure. You have not complied with our request, and if we do not hear from you by the 10th instant, we shall take the liberty of sending our collector to see you.

"Blank & Co."

No person likes to be dunned for a bill. To forestall the visit of the collector, the bill is paid. If not, send the collector, but armed with a polite request, something like this:

"Madam, I am from Blank & Company's store, to collect that little bill they thought you did not have time to call in with, and sent me to get it."

This request is worded so politely that no doubt the bill will be paid and, if not, then the customer is placed in the last class of 5 per cent, which you must dun. Now is the time to press the claim. Start by writing this letter:

"Dear Sir:—We have written you several times and our collector has called on you to collect the May balance you owe, but it seems you do not care to comply with our rule of monthly settlements. Can we hear from you and be advised just why you have not paid the bill?

"Blank & Co."

Now, the chances are the person has had a business reverse, or the head of the family is out of work, or ill, or many things may have mitigated against the bill being paid. So, for instance, the customer writes as follows:

"My husband has been sick, and I cannot pay at this time."

If the reason given is a good one, and you feel confident that the truth is being told you, extend ten days more time, at the end of which, if the bill is not paid, make a request for the bill and say that if the party cannot pay it all, a portion will be welcomed. If the person is honest—and most people are—a small sum will be sent you and the balance paid as soon as possible.

The person who starts out to "skin" a firm will pay no attention to these simple ways of collection, and must be called to time with a quick, short action. Always make the request to have the party call in person.

The next step, if none of these pleas succeeds, is the placing of the account in the hands of some well-known collection agency. Let it work out the salvation of this bad account. Some shops do not do this, preferring to keep after a person, accepting small sums till at the last the bill is paid; but to the writer's mind this is a very bad way to handle an account. Some stores will not permit a collection agency to sue unless the sum is over $50, as they figure on small bills that future patronage of the customer will more than balance the loss by continued lawsuit.

Our Country First.

The ultimate welfare of all business depends upon putting the welfare of the country first. Employers, employees, consumers and financiers must all do this if business is to continue to prosper. It is only when the country itself is strong and prosperous, it is only when all citizens place the welfare of the country above their own selfish welfare that business can be good.

When the government breaks down, business also breaks down as it has in Russia. In every way, it is vital to good business to place the welfare of the country first.

Keeping Promises.

One whole business system is built upon the keeping of promises. Keeping promises might be called the main stem or standard of our business operations.

Sometimes it is possible to make a little extra profit by simply failing to keep promises but in the end this proves very expensive. It weakens the standard by just that much and there is just that much danger of the whole business structure toppling over.

When promises are not kept, we cannot do business on the large and the efficient scale that we are doing it today. Honesty is the only policy that permits of rapid growth in business, cutting down the hours of work of the workers, increasing wages, increasing profits of the business man and making life more worth living for every citizen.

Cutting Out the Waste.

We, in this country, have earned the reputation of being great wasters. We have wasted our forests, we have wasted our lands, we have wasted our coal resources, our gas and our oil. It is high time that we called a halt. We can't continue to go on wasting and hold our present position in world affairs. We must give the closest possible attention to even the smallest waste.

Many great fortunes have been created by eliminating waste. The meat packers owe their present strength and prosperity largely to the efforts they have made to eliminate all possible waste in their business. The Standard Oil Company was able to outstrip all competitors, at least partly because of the manner in which it eliminated waste.

Any business man or any employee who eliminates wastes is bound to get ahead. Nothing can hold him back.

HOT WATER SUPPLY *and* CIRCULATION *to* OLD COLONIAL MANSION

Design and Installation of a Circulating System for Hot Water Domestic Supply in Large Residence

By Robert J. Gordon

Chapter XV.

SOME time ago there appeared a series of articles on "Overhauling the Plumbing in an Old Colonial Mansion." The entire plumbing system was described and illustrated in detail except the hot water supply to the fixtures. The writer did not have time to finish that part of the subject at the time the other articles appeared. Now he presents it here with the intention of completing the series.

Perhaps you remember that Mr. and Mrs. Adams, who live in the city bought that old colonial mansion and employed Mr. Jones, a plumbing contractor, in a country town not far from the mansion, to overhaul all the plumbing on a cost-plus basis.

You may also remember Si, his valuable old bookkeeper. He worked with Jones on the different layouts for the job. They consulted together and Si was really a great help to Jones. The contractor laid out all the working drawings in pencil on the drawing board, and the bookkeeper inked them in, and, indeed, colored some of them in a very efficient manner, but the most interesting thing about these two men was the arguments they would have. Jones, of course, was a thoroughly practical, well read man who knew both the practice and theory of his calling, but he disliked office work, including drawing. That was Si's part of the job. Si was also very well read, but his ideas often were impractical, because he never had practical experience in our trade.

Now we meet these men again in the office, Jones as usual hustling around, and Si as usual perched on his high stool and busy at his books. Bill, the plumber, who was working on the job in question, dropped in.

"Mr. Jones," he said, "what about the heater and the hot water supply piping layout for the mansion? I'm about ready for it."

"That's so," replied Jones. "I'll send out the heater and tank, and a piping layout this afternoon. Si," he called to the bookkeeper, "stretch out a sheet of paper on the drawing board and we'll start right away."

They both got busy and Bill went out to the job. Jones examined a catalog carefully, made a few notes in pencil and came over to the drawing board where Si was standing by, patiently waiting. He said nothing for he knew Jones was thinking the thing out, but the paper was neatly pinned to the board and the drawing tools were all ready for a start. Jones sat down at the board and commenced to sketch. Si stood alongside just looking on. That's the way Jones wanted him to act while the preliminary sketch was in progress.

It required only a few minutes to rough in the layout in pencil and when Jones was finished it appeared very much like Fig. 1 herewith.

"You sit down now, Si," he exclaimed as he arose and offered his seat to the bookkeeper. "Study the sketch a bit and see what you think of it."

Jones lit a cigar and awaited the bookkeeper's opinion. It seemed to be slow in coming, but it came.

"Well, I think you still have the same old failing, Mr. Jones," Si replied. "I think you are too liberal in spending the owner's money."

"How so?" demanded Jones. "I think it is a simple, inexpensive lay out."

"In the first place," replied Si, "I don't see why you run double lines from the tank to the fixtures. One line will deliver hot water from the tank as well as two. Ain't that so?"

"Yes, it will, but I don't think you understand the value of the circulation lines," said Jones kindly.

"Maybe I don't," retored Si, "but I do know that most of the jobs around here have only one hot water line running to the fixtures, and you show two—just doubling the expense, as I see it."

"Well, you had better get your eyes examined," snapped Jones impatiently. "You're always hugging the economy line and neglect the main issue."

"If I hadn't hugged the economy line in this office, you would have been broke long ago," growled Si. "You don't know the value of a dollar, neither your own nor any others."

"Don't be too personal, old chap, and don't be too thin skinned," broke in Jones as he kindly petted the old man on the shoulder. "I didn't mean to hurt your sensitive feelings. I just wanted to emphasize the fact that this job is no competition job. It is not one of those ordinary cheap jobs we have bumped against so often. This is a job that must be the best in design, materials and workmanship. Mr. Adams wants the best. He does not question the price. Its quality he is after. He said so, and you know it. That being so, what's the use of eliminating important parts of the system to save money for him when we know he does not want such foolish saving notions. Of course, we won't install anything that is not necessary for first-class work and perfect results, but we won't eliminate anything that is necessary for perfect results."

"Well, I maintain that the automatic regulator and the circulation lines are unnecessary," insisted Si stubbornly.

"On what grounds?" queried Jones.

"On the grounds that it is not current practice in this neighborhood," replied Si. "None of the other contractors do it, as far as I know."

"I don't care a pig's eye for the other contractors around here," snapped Jones. "We're working for Adams, not them. Do you understand what the circulation lines are for any way?"

"I think I do," replied Si. "They're for tempering the hot water with cold when the water is too hot."

Jones exploded with laughter.

"Temper the hot water, eh!" he roared. "That's a good one. Where did you learn it?"

Si felt sore at the mirth he had unwittingly provoked.

"You needn't laugh so heartily," he exclaimed. "I have proved that I'm right. I overheard Williams, your strongest competitor, make the statement. I was passing and just overheard it, you know. He said that the water in a certain boiler was scalding hot but the circulation line cooled the flow at the hot water faucets to the right degree, and the job worked fine. Ain't that proof enough?"

Jones laughed again. "No, man," he said, "that's no proof at all. That evidently was a defective job he was explaining, which happened to work satisfactorily because the water in the boiler or hot water tank luckily was scalding hot. We don't do work that way. We are going to hold the boiler temperature just right, and our circulation pipe won't cool the hot water one degree. The job Williams was talking about evidently had no check valve on the return line. We have one here, you see. That's what does the trick. Perhaps you won't believe it, but I have seen circulation jobs installed which actually prevented hot water from being drawn at the faucets. It came lukewarm even though the boiler was hot."

"Well, maybe I don't understand it right," queried Si. "Will you explain it a little?"

"What? Circulation?"

"The whole layout as drawn," said Si meekly.

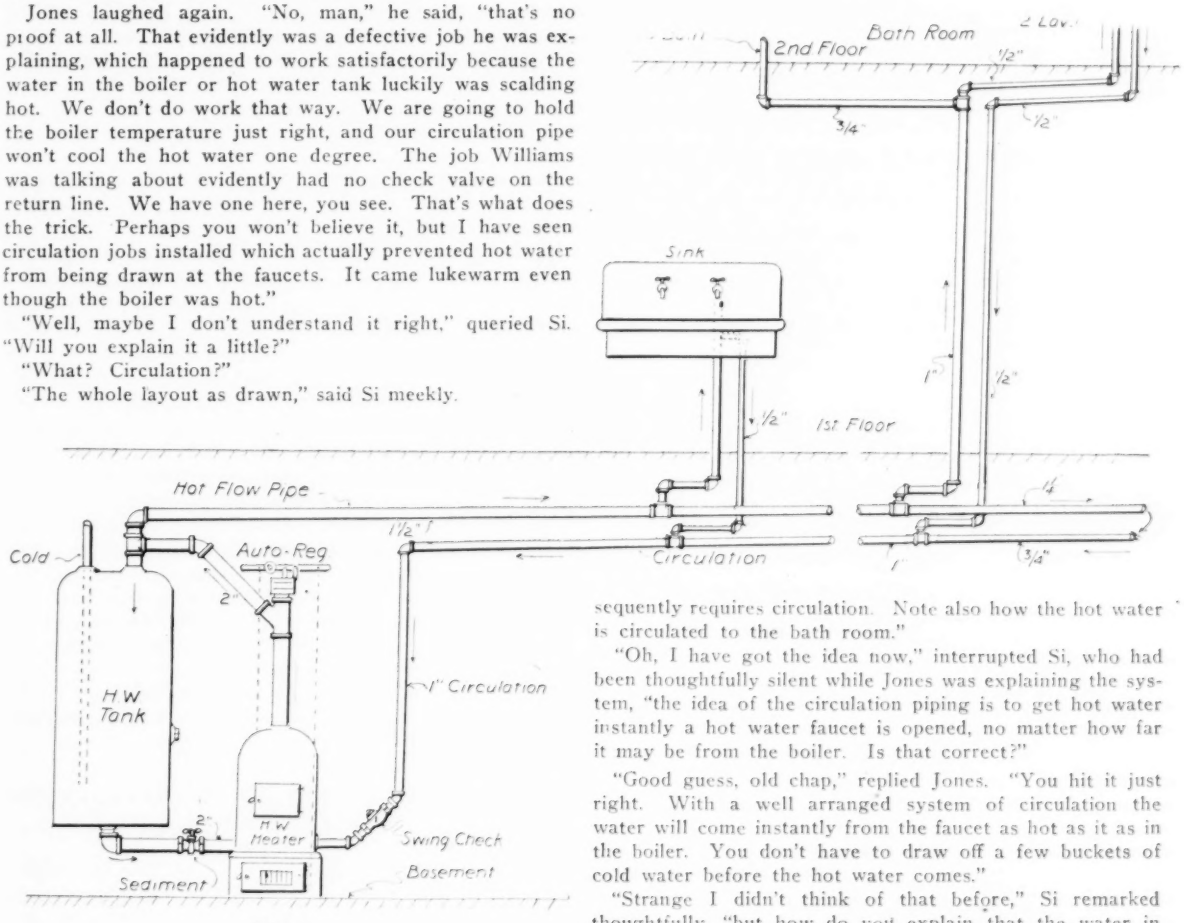


Fig. 1.

Jones was always glad to give his bookkeeper information. It was good for the business. He therefore settled himself down to a full description of Fig. 1, which was about as follows: "This system comprises a coal tank heater in the basement of the mansion. It will be set near the chimney where the filter is set. It is a cast iron heater of approved make, one of the kind that does not send all the heat up the chimney.

"The boiler will be 100 gallons and of copper.

"The flow and circulation, in fact, all hot water piping will be brass, iron pipe size, semi-annealed.

"The circulation between heater and tank will be simple and positive. It will be through 2-inch brass piping. I prefer to use 2-inch brass piping for this, if the heater is tapped large enough. The boiler has a 2-inch spud at top and bottom. It was ordered that way.

"From the top of the boiler a 1½-inch hot water flow pipe runs as far as the first riser to the bathroom. There it reduces to 1¼ inch and extends to the other bath rooms, etc., not shown. At the second bath room riser this flow main is reduced to 1-inch. The 1-inch then runs full size to the last bath room riser.

"Note that a ½-inch circulation is taken off the hot flow pipe to sink. This sink appears to be right over the circulating lines, and one would think such a short branch does not require circulation. So far he is right. It would not require circulation, as shown, if the branch were, say, 10 ft. or less, but in reality the sink is about 25 ft. away, and consequently requires circulation. Note also how the hot water is circulated to the bath room."

"Oh, I have got the idea now," interrupted Si, who had been thoughtfully silent while Jones was explaining the system, "the idea of the circulation piping is to get hot water instantly a hot water faucet is opened, no matter how far it may be from the boiler. Is that correct?"

"Good guess, old chap," replied Jones. "You hit it just right. With a well arranged system of circulation the water will come instantly from the faucet as hot as it as in the boiler. You don't have to draw off a few buckets of cold water before the hot water comes."

"Strange I didn't think of that before," Si remarked thoughtfully, "but how do you explain that the water in Williams' system was tempered down, while yours will come as hot as in the boiler?" he continued.

"That's dead easy," replied Jones, as he pointed to the swing check on the drawing. "Do you see that thing? Well, that's what does the trick. Williams didn't know enough to use a swing check, or if he did he didn't know how to install it properly. That swing check performs an important function. It opens to let circulation back to the heater, but closes when a hot water faucet is opened. That action, therefore, prevents cold water at bottom of heater or boiler from being drawn back through the return lines to the fixtures. Do you understand?"

Si did not answer promptly. He hesitated as if in doubt, but he was just studying the thing out for himself, an excellent way to learn. "When a faucet is opened," he mumbled slowly," the pressure drops instantly in the pipe at the

(Continued on Page 528.)

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

SEPTIC TANK FOR WET PRAIRIE CLAY SOIL.

Editor "Domestic Engineering:"—Will you please give us some information in regard to the size and type of a septic tank to be used for three water closets and two lavatories. The only possible location for the septic tank is in very low earth, on which, during rainy seasons, the water stands for several days. The soil, where this tank is to be built, is black prairie clay.

Alabama. T. G. L.

You have a difficult proposition to handle. The fact that the water stays in the ground for several days during the rainy season makes it difficult to dispose of the liquid waste from the septic tank. In fact, the septic tank, being underground, is liable to become flooded and useless in such a location, unless special means be provided to force the liquid matter out of the tank.

We think it is advisable in this case to install a cast iron or plate steel septic tank which is water tight. Let its top finish high enough above the ground line so that water will not get into the septic tank through the cover. Connect the house to septic tank with 4-inch cast iron soil pipe and lead-calked joints. At outlet of septic tank have another tank connected to septic tank with 3 or 4-inch pipe. Inside this secondary tank place a small bilge pump to pump this tank into the disposal field against back pressure of ground water. The pump may be centrifugal with vertical bronze rod and a direct connected motor on top, well above the water level of tank. You will see such pumps advertised in "Domestic Engineering" from time to time.

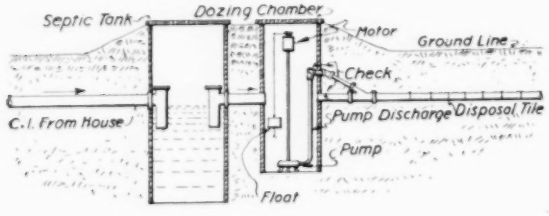


Fig. 1.

The motor may be operated automatically by a float in secondary tank. There must be a check valve on the pump discharge pipe. There may be a separate valved outlet from tank for a gravity discharge during ordinary weather, which may be closed during the rainy season. The disposal field may be of 3-inch agricultural tile pipe of the ordinary type laid say 18 inches or more below ground line in the ordinary way.

Fig. 1 gives an idea of the general scheme. The solids settle in septic tank. The liquid flows into the drying tank. It gathers there until drying tank is nearly full. Then the float throws on an automatic switch and the pump discharges the contents into the disposal field tile piping against the head of back water which may be there. When charging tank is nearly empty, the float falls and throws off the switch, thus stopping the pump. The checks on pump discharge and the overflow to disposal field prevent back water from filling the drying tank.

The sizes may be about as follows: Septic tank should be large enough to hold a 24-hour discharge from the fixtures. This gives the sewage 24 hours to settle the solids before it overflows into the drying chamber. This latter chamber may have a water capacity between high and low water lines equal to one-sixth of the septic tank. The cubical contents of the field tile may equal twice the capacity of the drying chamber. Thus, suppose the closets discharge 250 gallons per day and lavatories 50 gallons per day. Then the capacity of septic tank may be 300 gallons. The capacity of drying tank may be 50 gallons, and the disposal field may have approximately 300 feet of 3-inch field tile laid with reasonably open joints.

Regarding size of pump and motor, we advise you to communicate with the manufacturers of these devices.

BEST WAY TO CONNECT HOUSE SERVICE PIPES TO STREET MAINS.

Editor "Domestic Engineering":—What are the advantages of lead pipe with wiped joints from main to iron service pipe? What are the disadvantages of lead pipe connected from the corporation cock, to service pipes with couplings and no wiped joints? What are the disadvantages or advantages, if any, of connecting the iron service pipe direct to the corporation cock without lead connection? What style of connection is generally used in good practice by water companies throughout the United States?

Washington. B. C. H.

The advantages are: (1) It is a flexible connection that yields with expansion and contraction of either main and so prevents breakage or leakage from that cause; (2) it is a permanently water-tight and safe connection. The wiped joints are considered superior to any other form or make of a joint or lead pipes.

The only advantage gained by connecting lead service connections to water mains and house service lines by the use of couplings without wiped joints is that the small extra expense, if any, of the wiped joints is eliminated. This can

hardly be considered an advantage. From an efficiency point of view, we believe it is generally considered a disadvantage by expert waterworks engineers. There is no advantage in connecting an iron service pipe direct to the corporation cock on a street main, except perhaps the trifling advantage of first cost. It is a cheap way of making the connection, and some people who do not know better are prone to omit the lead flexible connection. The disadvantage is that by eliminating the lead gooseneck connection, the service connection is very liable to become broken near the corporation cock and leak. Such underground leakage may go on unnoticed for a long time. It not only wastes water, but tends to damage the streets. The liability of damage is so great that we advise the use of lead pipe gooseneck connections with proper wiped joints.

The style of connections generally used in good practice by water companies is, as far as our observation goes, the lead gooseneck connection with wiped joints. The gooseneck should be at least 24 inches long and the joints are wiped. One end of the lead pipe is wiped to a brass solder nipple, which is screwed on the end of the galvanized or brass service pipe. The other end of the lead pipe is wiped to the coupling tail of the corporation cock coupling. This coupling has a ground joint which is the final connection in the line. The offset of the gooseneck should be about 1 ft. with easy bends. That will yield to any motion in any direction of the main or the service line, and has been found to give the best of satisfaction even in shifting soils.

CONNECTING UP HOT WATER RADIATOR TO DOMESTIC RANGE BOILER.

Editor "Domestic Engineering:"—We will feel very thankful if you will kindly enlighten us on the following:

1.—Do you approve of a bath room or any room in a residence being supplied by a domestic hot water circulation from a range boiler, said boiler being connected to a pipe coil in hot water heating boiler, and also to a small coal laundry heater?

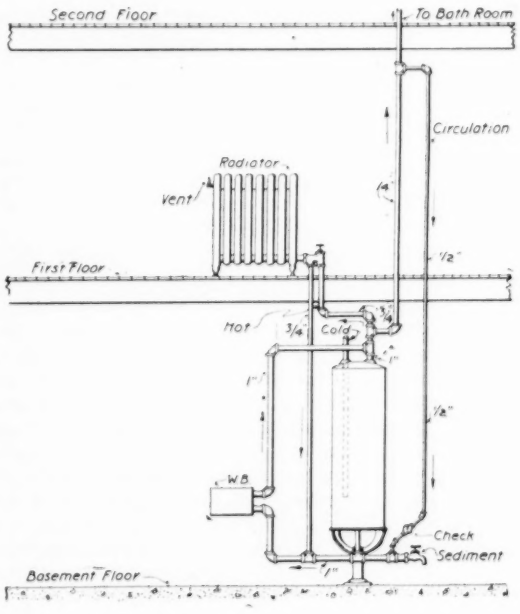


Fig. 1.

2.—Will you kindly explain or illustrate just how the connection should be made from the range boiler to a radiator, the bath room being on the second floor and range boiler in basement? The hot water supply to the fixtures must also be circulated.

3.—We are informed by an old, experienced plumber, that a radiator being heated by the domestic water, is liable to make the water rusty and unfit for use, and advised not to make such an installation. If this is true, would there be any way of coating the inside of the radiator, so that it cannot rust? All new material is to be used.

Iowa. S. P. H.

1.—Yes, arrangements of this kind give reasonably good results.

2.—Fig. 1 shows how the radiator and the bath room may be piped up for hot water supply from a range boiler as desired. Note that the connections at top of boiler favor circulation to the radiator which is on the first floor. Also note the sizes of the pipes. They are important. We advise 1-inch connection between range boiler and water back in this case. There should be a light swing check valve on the bath room circulation pipe on the angle—where shown. This arrangement should produce good results providing the water back heats enough water for both radiator and bath room.

3.—We believe the "old experienced plumber" is quite right. The radiator and any black iron piping that may be used on such a system will soon rust and may color the hot water supply to house, yellow. We do not know of any lining or coating that can be effectively applied to the inner surface of the radiator to prevent its corrosion for any great length of time. Asphaltum varnish probably is as good as any and may in your case meet all requirements. You may try it. Heat the radiator to, say, 200 degrees. Pour in asphaltum varnish, filling the radiator entirely full. Then pour out the varnish before the radiator cools too much. Of course, you must be sure that the radiator is perfectly dry inside before filling with asphaltum. Then again you must be sure that the radiator can stand the water pressure.

HOT WATER SUPPLY FOR WATERING LIVE STOCK ON FARM.

Editor "Domestic Engineering":—I would like to get your advice on the best way to run pipes for best results on the following job. I wish to put in a hot water plant to have warm water at the barn in cold weather for watering purposes. The party has a 300-gallon cistern on top of a hill, so he has good pressure, and the furnace room is about 8 ft. higher than the floor of the barn. The barn is 80 ft. from the furnace room. Is it necessary to run a return for same and what size pipe would be best? I intend to use a 60-gallon tank for hot water storage purposes.

Wisconsin. F. C.

We would not advise you to attempt circulating the hot water down to the barn from the furnace room where we presume your 60-gallon hot water boiler will be set.

We advise against circulation, (a) because you cannot secure it by gravity under the existing conditions, (b) because you would gain but little even if you did have circulation.

As the hot water will be used for tempering drinking water for the stock and for washing up purposes, there should be no objection to the barn hands drawing the cold water from the line before the hot water comes. There should be no waste of water in the procedure, as the hot water will most likely have to be mixed with cold water before it is used anyhow.

We advise running only one pipe to barn without circulation, but insulate it underground.

DOLAN & OLSON

Successors to the

BON TON DE LUX PLUMBING CO.

Hank and Jerry Find Out that P. T. Barnum was Right About a "New One Born Every Minute", and Incidentally that Diggers Need Kid Gloves

(Continued from Page 293 in the May 15th Issue.)

ME and the Missus was reading the papers the other evening and we run across a little piece telling about an Improvement Association meeting being held that very evening in a near by school house, and so it looked like a fine chance for us to run over and meet some people and see what they had to kick about. It seems as if that is what meetings are for. They find something or somebody to kick and then they hold a meeting. When we were kids in school, some fellow would kick the fellow next to him and say "kick the other kid" and so it would go all the way down the line, everybody kicking and getting kicked. Well, there was a nice crowd at this meeting and everything rolled along slow and easy until some fellow got in a few words about a proposed new milk ordinance and then the fireworks began. And one fellow says that these milk dealers are just like the plumbers and the barbers and the horseshoers and the electricians and everybody else. They frame up ordinances to protect their own businesses and get them passed and up go the prices. And of course when he got to talking about plumbers he was looking at me and the Missus, but I never had anything to do with getting plumbing ordinances passed. They been on the books for years. But maybe that is one mistake that we been making. Anyhow, this new milk ordinance is just about as popular as the smallpox. Maybe if we had been operating on the T. E. B. plan in years gone by, instead of building up stone walls around the business, we would be better thought of by the general public.

It's An Old, Old Story From Here On.

Me and Hank is wondering if it isn't about time for prices to stop climbing. Some of these birds must be making a sock full of jack all right. And talking about this business, it's a funny thing how people take some things to heart. For instance, this is the time of the year when the boss plumber is willing to promise steady work all the year round to any good journeyman and the journeyman is dead willing to believe that bunk. On the square, they seem to like it. And then along about August, things slow up a bit and pretty soon Mr. Journeyman is looking for a job again. And the boss plumber always believes what his customers tell him about prices that they get from other plumbers, and so he keeps cutting corners here and there until finally he lands in the bankruptcy court, unless he goes up in the air so far that he never comes down. And that brings to mind the fact that a swell chicken blew into the shop yesterday and she smiled and I smiled, and she asked for Mr. Jerry Dolan and I said "That's me, mum" and kept right on smiling, and she reached inside of a young trunk that she was carrying and fished around in it for a while and finally came up with a blue covered document and $1.50 in cash. I didn't know what the joke was about, but it looked like a good time to quit smiling, and so I quit and begun to read and here it's a summons to go down to the Federal Court and tell what I know about a bird that went hay wire. Some pay, I'll say, for a day's work. You see this fellow came in off the farm and wiped the mud off his boots and bought a little one horse hardware store that was for sale. And of course he was used to working around on a quarter section of land and he got tired of being cooped up in a nail shop and he figured that the best way to get outdoors would be to go out selling goods and he called around at a few new houses and everywhere he went he found that some one else was selling nails for ten cents less per keg than he could buy them for, but everywhere he went they told him about the plumbers and electricians being robbers and getting rich. Well, all he knew about plumbing, heating and wiring could be written in long hand on the back of a canceled one cent stamp, but that didn't bother this bird any. He got hold of the best and fastest plumber in the Northwest. This plumber admitted this to be a fact. And he got hold of the same kind of a wire puller. He also admitted that he was the original humdinger. And then the three of them started out to make a killing. Overhead expense was nothing in their young lives; they wanted contracts and lots of them and they got them. And the supply houses began to figure right away that here was a new concern that was going to outshine the sun and so they each put a salesman or order taker on the job so as to cop off the fixtures and piping just as soon as these birds would land a contract. It was some party. Deliveries were so frequent that it looked for awhile as if it would need a traffic cop to keep them rolling properly. And then things slowed down a little. There was no more jack coming in, but the supply house bills continued to roll in and finally these three parted, leaving the farmer-hardware dealer to hold the bag. He didn't hold it very long, because the wholesalers looked inside of the bag and what they saw or failed to see convinced them that it was high time to slip a brand new pad lock on the front door. And then the liens began to fly. Every one that had a lien claim, filed it in a hurry and now a lot of people that wanted a cheap job are going to pay double, just because the law in this state provides that anyone furnishing labor or material entering into the improvement of any property has a lien claim for ninety days following the last delivery or last work. It sure is hard, but old P. T. Barnum says that there is a new one born every minute. The jobbers stand to lose a bunch of change on this deal, but of course it all goes into the overhead and the rest of us have to pay it sooner or later. And a fellow would think that a jobber could see that merely opening new accounts isn't going to make any more business. There is a certain

amount of work that will be done anyhow and it might just as well go to the shops that have been tried and have proven themselves right, but instead of that the tendency is to grab every new one that comes along, even at the risk of getting stung about nine out of ten times.

An Unwritten Message.

Me and Hank was out for a little while the other day and we told the kid in the shop to answer the phone etc., and when we got back he says that a lady called up and wanted us to come out and install a bath room right away and we asked him where it was and he says that he can't remember the name but he had written it down on a piece of paper and we looked all over and around the desk and couldn't find it and finally the kid pulls his pencil out of his pocket and he looked kind of foolish and Hank asked what was the matter and he says that he must have written it down and the pencil didn't write. Sure enough, this bird thought he had a pencil, but it was one of these sticks like the butcher uses when he makes a 40 cent rolled roast out of 20 cent beef.

An old time pal blew in the other day. He and I used to go to school together, but his folks moved out West and he went with 'em and out there he learned the plumbing trade and now has a shop of his own and he sure was surprised to find that both of us had taken up with the same trade. He was on his way East and was only in town between trains, but he wanted to see some plumbing installations and so we jumped into the flivver and went out to give some of them the once over.

Out where he comes from, pretty nearly everything is lead pipe and wiped joints and he couldn't swallow this idea of iron waste and vent pipes and iron closet bends, etc. On the other hand, he says that out his way they still run their bath and basin waste pipes into the lead bends and we know that that is surely not the best thing in the world, unless a fellow is looking for some repair work in the future.

Diggers Should Have Kid Gloves.

We've been doing a little house job out on Park Avenue and the lot was pretty low and needed a lot of filling, so the contractor makes a deal for a few hundred loads of dirt and then he needs a few laborers to level it off and so he goes down on Bridge Square and picks up a half dozen bums and they agree to come to work the next morning but when morning comes only two of them show up for work. He gives them a couple of shovels and starts them off and at noon they drift down to his office and want their "time." He wants to know the reason for quitting so soon and they tell him that the shovels are too heavy. Oh, boy, can you get that? The good old Number Two Ames is too heavy for the big strong men of today. What did he do? He bought some light weight shovels and he picks up a new crew every day and a new set of shovels every other day, because he has found that a shovel will last twice as long as a shoveler.

They Drifted Down to the Office and Demanded Their "Time" Because the Shovels Were Too Heavy.

(To be Continued.)

CONVENTION DATES.

June 15, 16 and 17, 1920.—The thirty-eighth annual convention of the National Association of Master Plumbers, in Pittsburgh, Pa., with headquarters at the William Penn Hotel. The Sanitary and Efficiency Show, at Motor Square Garden, will be open from June 14th to 19th, inclusive.

September 7, 8 and 9, 1920.—The annual meeting of the American Society of Sanitary Engineering, at St. Louis, Mo.

A dispatch from Columbus, O., states that approximately 2,000 business and professional men of that city have announced that they will give one day's service each week to farmers needing assistance, in order to overcome farm labor shortage and insure harvest hands for the farmers near that city.

Texas Master Plumbers in Annual Meeting at Fort Worth

Men of "Lone Star" State Hold Successful Convention; Points, Vital to Proper Enforcement of By-Laws Discussed. All Officers Unanimously Re-Elected.

THE Associated Master Plumbers of Texas, on May 10th, 11th and 12th, held at Fort Worth, what was termed "one of the most successful and best attended conventions held in Texas." This precedent was established in the Chamber of Commerce Auditorium in that city where the convention was held.

Several locals, heretofore isolated from the state organization, were taken into membership, thereby doubling the enrollment that existed in 1919.

Entertainment for the ladies as well as the delegates featured the program for the three days' stay, and much hilarity was evidenced throughout the "good time" periods.

Monday Morning Session.

The Monday morning session was called to order at 11:15 by President W. C. Clifton. The invocation was rendered by the Rev. J. Frank Norris. The address of welcome was delivered by T. J. Powell, representing the mayor of Fort Worth, who gave the freedom of the city to the delegates. To this, Joseph Netzer, responded. George R. Doyle, representative of the National Trade Extension Bureau, then addressed the assemblage.

The following committees were thereupon appointed:

Credentials: Lee Rogerson, Houston; R. J. Hunter, Corpus Christi; Frank Lightfoot, San Antonio.

Resolution: Joseph Netzer, Laredo; A. E. Hancock, Austin; R. C. Maltiz, Beaumont.

Auditing: W. H. Shutte, G. G. Reinwald, San Antonio; H. W. Warren, Houston.

Publicity: A. F. Herrington, R. G. Thomas, San Antonio; Mr. Lester.

The morning session was then adjourned.

Monday Afternoon Session.

George R. Doyle was given the right of way in the afternoon session, and the bookkeeping system, accounting and other office fundamentals as advocated by the National Trade Extension Bureau, were thoroughly discussed. In this discussion he called attention to the absolute necessity of reading the trade papers, saying that "the trade papers are one source of reliable information as to what is going on in the outside world." In concluding, he declared that "they are an asset to your business."

Mrs. E. T. Vossler was hostess to the ladies during the afternoon session, while the entire delegation was entertained at the Majestic Theater that evening.

Tuesday Morning Session.

The first order of business for the Tuesday morning session, which was opened at 9:30 by President Clifton, was the reading of the minutes of the last convention by Secretary Lee Rogerson, of Houston. The report of the president was then read, and certain specified issues were given over to the respective committees for action. Secretary Lee Rogerson's report was then read, and showed that the association had greatly increased its membership during the past year. This was followed by the treasurer's report, which was referred to the Auditing Committee, and the report of the last national convention by Frank Lightfoot.

Reports of several other committees were also read and approved.

The question of application for membership was brought up by Delegate Callahan, of Houston, who gave his opinion to the correct procedure in receiving and the class of men that should compose the organization. Joseph Netzer, of Laredo, also discussed this question, stating that the board of directors had full authority to act on new applications for membership, and that unless new applicants had charges preferred against them by some standing member, the membership was granted on application. Discussion also came from the chair, but action was finally left to the discretion of the board of directors.

Resolutions.

The following resolutions were then read and adopted:

"We, your Committee on Resolutions, respectfully recommend the adoption of the following:

"That this convention acknowledges the splendid work done by the local master plumbers in the various and sundry arrangements put through for the handling of this convention and votes them a hearty thanks for their much appreciated work. Also, we would especially express to them our hearty appreciation for the most royal entertainment and the perfect manner in which our ladies have been taken care of. (Adopted.)

"We further recommend that the local press be given a vote of thanks for the interest shown in our affairs and the publicity given our activities. (Adopted.)

"We further recommend that this convention extend a vote of thanks to George Doyle, of the Trade Extension Bureau, for the most interesting and instructive lecture delivered to our membership. (Adopted.)

"A vote of thanks and appreciation to the Atlas Supply Co. for the courtesies shown us, also a vote of thanks and sincere appreciation to Miss Marshall, the young lady, who has so kindly assisted us in making our records complete. (Adopted.)

"We further recommend that the sum of $50 be appropriated and the same paid to the local membership, who have so splendidly entertained us. (Adopted.)

"That the Committee on Laws be instructed to have the By-Laws, as amended to date, published in booklet form and deliver same to the state secretary for general distribution to our members. (Adopted.)"

Tuesday Afternoon Session.

The session which opened Tuesday afternoon was devoted firstly to the report of the Resolutions Committee, dealing with paragraphs 1, 2, 3, 4 and 5 of the president's report, all of which were adopted, along with other recommendations. A motion to raise the annual dues from $12 to $18 was then made, and adopted. Following this the reports of the Auditing Committee and the Committee on By-Laws were read and accepted. The report of the Committee on By-Laws, dealing with the board of directors, advocated the changing of the by-law so as to have eight directors, four of whom would serve two years, the other four retiring the following second year, and making the president, vice-president and treasurer be the other three directors, making a total of eleven.

Wednesday Morning Session.

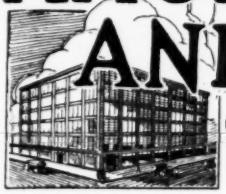
The following members were elected to serve on the Legislative Committee: R. G. Thomas, San Antonio; George Robischung, Houston; Mr. Donnelly, Austin.

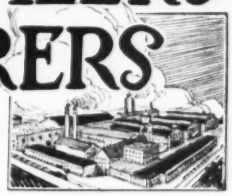
The need of better plumbing in Europe was the subject of an address given by Mr. Braden, of San Antonio, who went across with the American Expeditionary Forces, and while there made an extensive study of the sanitary conditions in his zone.

The report of the board of directors was read and adopted. It was also decided that $50 be given to the Trade

(Continued on Page 505.)

AMONG THE WHOLESALERS AND MANVFACTVRERS





ALLRIGHT MFG. CO. PLANNING FACTORY ADDITION.

The Allright Mfg. Co., Rural Hall, N. C., is planning the construction of a three-story factory, 60x200 ft., which, including equipment, will cost in the neighborhood of $100,000.

GREENFIELD TAP & DIE CORPORATION EXTENDS LINE.

The Greenfield Tap & Die Corporation, Greenfield, Mass., has acquired the common stock of the Lincoln Twist Drill Co., Taunton, Mass., which will give the company a complete line of taps, dies, reamers and twist drills. The plant will be enlarged.

JOHN WOOD MFG. CO. ACQUIRES SHEET IRON MILL.

Arrangements have been completed by the John Wood Mfg. Co., Conshohocken, Pa., for the acquisition of the sheet iron rolling mill, located at Fayette and Canal Streets, which will be remodeled and improved to meet the company's requirements.

KOHLER CO. OPENS MAIN FLOOR SHOWROOM IN ST. LOUIS.

Stephen H. Gilmore, manager of the St. Louis branch of Kohler Co., Kohler, Wis., is sending announcements to the trade on the opening of the company's new showroom. This is located on the ground floor of the Pennsylvania Building, Tenth and Olive Streets, the address being 215 North Tenth Street. The company is showing a complete line of enameled ware and also its new electric lighting plant.

H. E. SPEAKMAN URGES ESTABLISHMENT OF MORE TRADE SCHOOLS.

"Train likely young fellows in all branches of the building trades, especially the plumbing craft," advised Harry E. Speakman, vice-president and treasurer of the Speakman Company, Wilmington, Del., who, at the invitation of the Master Plumbers' Association of Philadelphia, addressed that body at its monthly meeting June 3rd in the Builders' Exchange, Philadelphia.

The speaker called attention to the present scarcity of journeymen plumbers. That this condition would not always exist he advised the establishment of more trade schools where plumbing would be taught. Mr. Speakman said that it might be necessary for master plumbers to look for good young material to train, as most boys after they quit or finish school want to go immediately to the most lucrative jobs, many of them becoming chauffeurs on delivery trucks. "See the parents of the boys you think would make good plumbers. Impress upon them the necessity of a good artisan training," he advised.

William M. Anderson, president of the Philadelphia Association and chairman of the meeting, voiced similar sentiments in commenting on Mr. Speakman's address.

During the talk Mr. Speakman touched briefly on what his company was trying to do towards standardization of parts, taking as a specific instance, enameled and vitreous lavatories and the brass work used in connection with them. He also spoke briefly upon showers and what his company was doing to popularize them.

LEHIGH VALLEY SUPPLY CO. OPENS NEW BUILDING.

The Lehigh Valley Supply Co., of Allentown, Pa., on Tuesday evening, May 15th, celebrated the opening of its new building, a two-story structure, measuring 50x120 ft. As this date was also the first anniversary of the founding of the company's business, the occasion was observed in a fitting manner, members in the trade throughout the company's territory being present as invited guests. Dancing followed by a buffet luncheon featured the event. The Company plans to open a branch at Easton, Pa., in the near future.

INCREASED PRODUCTION ESSENTIAL TO PRICE REDUCTION.

Regardless of temporary betterments in the price situation, such as the recent price cutting wave which swept the country, the high cost of living will not permanently cease to be until production much more nearly overtakes consumption than it does now.

Speakers at a recent meeting of the Economic Club in New York City said that only a new orgy of spending and no permanent betterment to the price situation have resulted from the recent cut price sales throughout the country. Were price cuts the result of increase in production, these leaders say, such cuts would reflect changed conditions which would mean that prices had taken a step toward a permanent return to lower levels. Instead of this, it was urged, the recent price cuts were caused solely by the exigencies in which merchants found themselves because of a cessation of buying by the public and questions involved in the financing of their business.

J. I. Straus, of R. H. Macy & Company, was the speaker at the Economic Club dinner who analyzed the results of the price cutting movement. "The horizontal cuts, if they continue, will seriously menace the prosperity of the industry concerned," he said. "If the reductions are legitimately made, they are not only causing a sacrifice of reasonable profits, but are cutting into capital; if they are falsely made they are misleading the public into unwise extravagance.

"As manufacturers have all along complained of the inability to deliver requirements, the rehabilitation of merchandise stocks, depleted by forced sales, will create an additional demand, and, therefore, will tend to cause a rise in prices. In other words, the distributors are bulling the market against themselves."

Mr. Straus urged the decreasing of demand through voluntary self-denial and the restriction of exports by a licensing system.

Francis H. Sisson, vice-president of the Guaranty Trust Company, said: "The advantages accruing to consumers in consequence of declining prices were easily exaggerated and misunderstood. As the reductions in prices at the present are not due to overproduction, he said, it would seem advisable to avoid a hasty conclusion that the present movement forecasts a universal and drastic drop in commodity prices."

The need, therefore, for continued saving and safe investment remains paramount. The present market prices of Liberty Bonds and Victory Notes, as well as the continuation of the sale of Government Savings Securities offer the public the opportunity to invest their savings so as to obtain positive and assured returns.

THE MAY MEET OF THE NEW ENGLAND METAL PRODUCTS GOLF ASSOCIATION.

After giving the members of the New England Metal Products Golf Association a sample of his several brands of disagreeable weather the Boston weatherman turned out a perfect day for the May meeting of the association held at Belmont, near Boston, on Thursday, May 27th. The April match was played under dull lowering skies with a disagreeable chill to the air, and the day first set for the May meeting, the 25th, was even worse, and anything but golfing weather. But no fault could be found with the day on which the match was eventually pulled off.

Probably due to the change of date the attendance was small, only ten members and one guest participating in the play. No cards were kept for the morning play, but in the afternoon G. A. Murphy had no difficulty in pulling down both the low gross and low net prizes, notwithstanding he had a handicap of but four strokes. His gross was 81 and net 77.

The cards follow:

	Gross	Hdcp.	Net
G. A. Murphy	81	4	77
W. H. Hunter	83	3	80
J. S. Nicholl	94	14	80
W. H. Thayer	87	6	81
R. E. Sargent	94	12	82
G. F. Uhler	106	24	82
L. W. Smith	98	14	84
S. C. Cutler	99	15	84
W. F. Hubbard	113	24	89
Charles Clavin (Guest)	124	30	94
H. W. Thorndike	120	24	96

MIX GOLF WITH BOILER BUSINESS.

The American Boiler Manufacturers' Association met in convention at French Lick Springs Hotel, French Lick, Ind., May 31st, June 1st and 2nd. Tuesday afternoon, June 1st, the majority of the members in attendance participated in a golf tournament, which was played on the beautiful French Lick Hotel 18-hole course and was a handicap event. The President's Cup, the chief trophy, was won by J. P. Dugger, secretary of the Kewanee Boiler Co., Kewanee, Ill, the Runner-Up Cup being won by Mr. McKeown, manager of the O'Brien Boiler Works Co., St. Louis, Mo. Kicker's Handicap Cup was won by A. G. Pratt, vice-president of the Babcock & Wilcox Co., New York. President E. E. Baker headed the Kewanee Boiler Co. delegation and had with him his famous boiler-shop quartet, which has for several years so artistically helped to sing Kewanee onto the map.

Bastian-Morley, Ltd., Toronto, Ont., has been incorporated with a capital stock of $300,000, by James P. Morley, Oliver A. Ludlow, both of La Porte, Ind.; John M. Godfrey, Toronto, and others, to manufacture heaters, furnaces, lighting and heating systems, etc.

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded, as reported by "The American Contractor":

$1,000,000. Housing, Danville, Va., Riverside and Dan River Cotton Mills.

$500,000. Bank and office building, Steubenville, O. Steubenville Bank & Trust Co.

$500,000. Store, Racine, Wis. Simon Sklute.

$350,000. Room, Pittsburgh, Pa. State of Pennsylvania.

$285,000. School, Orville, O. Board of Education.

$265,000 School, Aurelia, Iowa. Consolidated School District.

$250,000. School, Taylor, Pa. Taylor School District.

$200,000. Bank and office building, Chicago, Ill. Citizens' State Bank of Lakeview.

PERSONAL MENTION.

Clarence M. Woolley, president of the American Radiator Co., Chicago, will soon be elected a member of the board of directors of the General Motors Corporation, according to an announcement just issued by Edward R. Stettinius, of J. P. Morgan & Co., New York.

Cliff Thompson, well known to the trade as a former manufacturer of plumbers' woodwork in Holland, Mich., has become associated with the Kalamazoo Sanitary Mfg. Co., Kalamazoo, Mich., and will cover the Central States for this concern.

Obituary

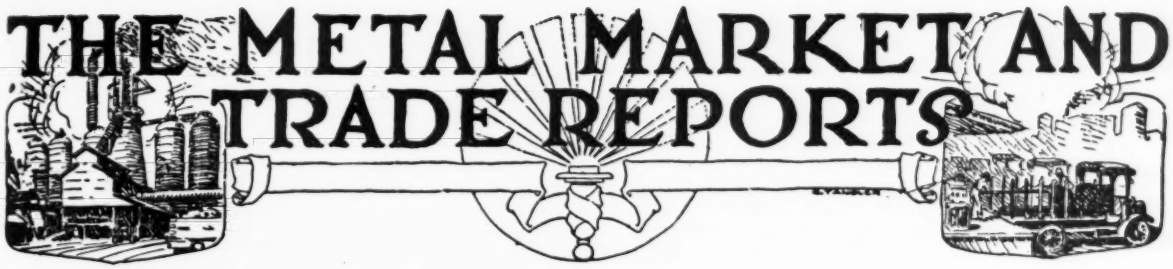
Charles Greene.

Charles Greene, traveling representative for the Nye Tool & Machine Works, Chicago, died Friday evening, June 4th, at the Lake View Hospital in Chicago, after several weeks' illness, in his thirty-third year. Mr. Greene, who was formerly connected with the Borden Co., of Warren, O., for several years, had an exceptionally wide circle of friends in the trade who will be sorry to receive the news of his untimely death. He was buried at Eaton Rapids, Mich., on Monday, June 7th. In announcing his death, H. G. Nye, president of the Nye Tool & Machine Works, sent the following heart-felt letter to his friends:

"Charlie Greene is dead. That tells it all, for you knew him as I knew him and as thousands knew him, and he needs no eulogy from me, or anybody. He wrote his own in the years that he went up and down this country, not merely selling goods, but also making friends. For several weeks Charlie has been putting up a good, game fight—for he took pain as he took pleasure, with his head up—but the fight was too hard to keep up forever. So last Friday night, June 4th, a good scout passed out. I am sending this letter to many of those who knew Charlie Greene, because I am sure you will want to give him Godspeed as he is crossing. We needn't worry about Charlie, for I figure a man can't be a good friend on this side without making a Good Friend on the other. But the trade lost a good salesman and a great heart when Charlie Greene quit the road for the long home stay up yonder. And I hope, when our turn comes to take the same trail, that other men will think as kindly and as sadly of us, as all his world of friends will think just now of Charlie Greene.—Sincerely yours,

"H. G. Nye."

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

The production of pig iron in the United States is now at the rate of fully 37,000,000 gross tons a year, representing a sharp recovery from the less than 30,000,000 tons to which output dropped during the rail strike. The present rate is less than 10 per cent under the rate in March, just before the rail strike, the heaviest since October, 1918. With improving rail traffic conditions the March rate of production may be attained, if not exceeded, by the latter part of the month. Steel production, which has kept fairly close pace with pig iron, is now at the rate of about 42,000,000 gross tons of ingots a year. Finished steel has lagged somewhat behind crude, as it is more convenient to stock ingots, billets and sheet bars than finished steel. The steel accumulations probably amount to more than 1,500,000 tons.

Prices quoted by independent steel manufacturers show a very slight tendency, the decline being chiefly for the earliest deliveries. Export demand is of small proportions, except in the case of tin plate. In the British market a decreased export demand has been reported for several weeks. Prices in the United States market are so far below those obtained in Great Britain that American producers can undersell British producers at even higher prices than in their home market. In spite of a lightness of demand, the pig iron market is far from showing any actual signs of weakness.

Last week's car supplies were such as to enable the tin plate mills, as a whole, to ship somewhat more tin plate than they had made, but production was only about 50 per cent of capacity. The total of tin plate production last week did not run any heavier than the week before. Some of the independents made gains, but the leading interest fell off about 10 per cent. The railroads are making special efforts to give the tin plate mills box car service, but there is no regular rule, and the Interstate Commerce Commission displays no disposition to make absolute rules in matters of this sort, except in extreme cases.

In the Middle West and South the pig iron trade is in a quiet tone and a softer feeling seems evident. The prime factor in this situation is the desire of consumers for prompt deliveries, which cannot be facilitated under the sold-up condition of iron makers. Very little buying is in progress for forward shipments. However, furnace and foundry operations have improved and shipments are about on a plane with production. Coke output has increased with delayed deliveries received by consumers, but new business is limited by the stiff market as buyers are holding off for concessions. Pennsylvania and Ohio interests have taken some nearby orders, and export tonnage placed was fair last week.

Considerable revival of pig iron inquiry covering all grades was noted at the close of the week, with prices in all actual sales showing stiffness and quotations indicating even a slow but certain upward trend as to values in the valleys.

Pressure for coke has been very severe, as production failed to meet the increasing demand, and in some of the important iron regions railroad congestion suddenly grew worse, which prevented deliveries of coke on even the expected basis. This forced a slowing down of operations, some stacks even banking fires. Prices for pig iron are quoted as follows:

No. 2X, Philadelphia	$47.35 to $49.35
No. 2 Southern, Birmingham	42.00 to 44.00
No. 2 Buffalo	45.00
No. 2 Chicago	43.00 to 45.00
Basic, Valley, furnace	43.50
Bessemer, Pittsburgh	44.50

Copper.

Increasing inquiries for copper are pleasing the trade after the dullness of two weeks in domestic demand, and indications are now pronounced for the beginning of a buying movement by large consumers. Leading interests are likely to open third quarter books any day, and this fact gives the market a firmer tone. Producers still quote their reduced prices of 19 cents for June and July and 19¼ cents for August delivery, while smaller sellers are said to be willing to shade to 18¾ cents on fair-sized lots, although jobbers are closing for odd quantities at 18¼ cents a pound. Present sales are small, but export demand is substantial. Latest figures on sales last month are disappointing considering the favorable arrangements for foreign credits made by the Copper Credit Association as producers' representative. This fact, however, is taken to indicate more activity this month, particularly since transportation, both rail and ocean, were handicapped by labor troubles and congestion in May. Last month's sales, covering both domestic and foreign consumption, totaled 62,000,000 pounds, compared with 101,000,000 in April and 320,000,000 in March. The opinion is freely heard that the volume of business in copper at the end of this month may exceed that of the previous five.

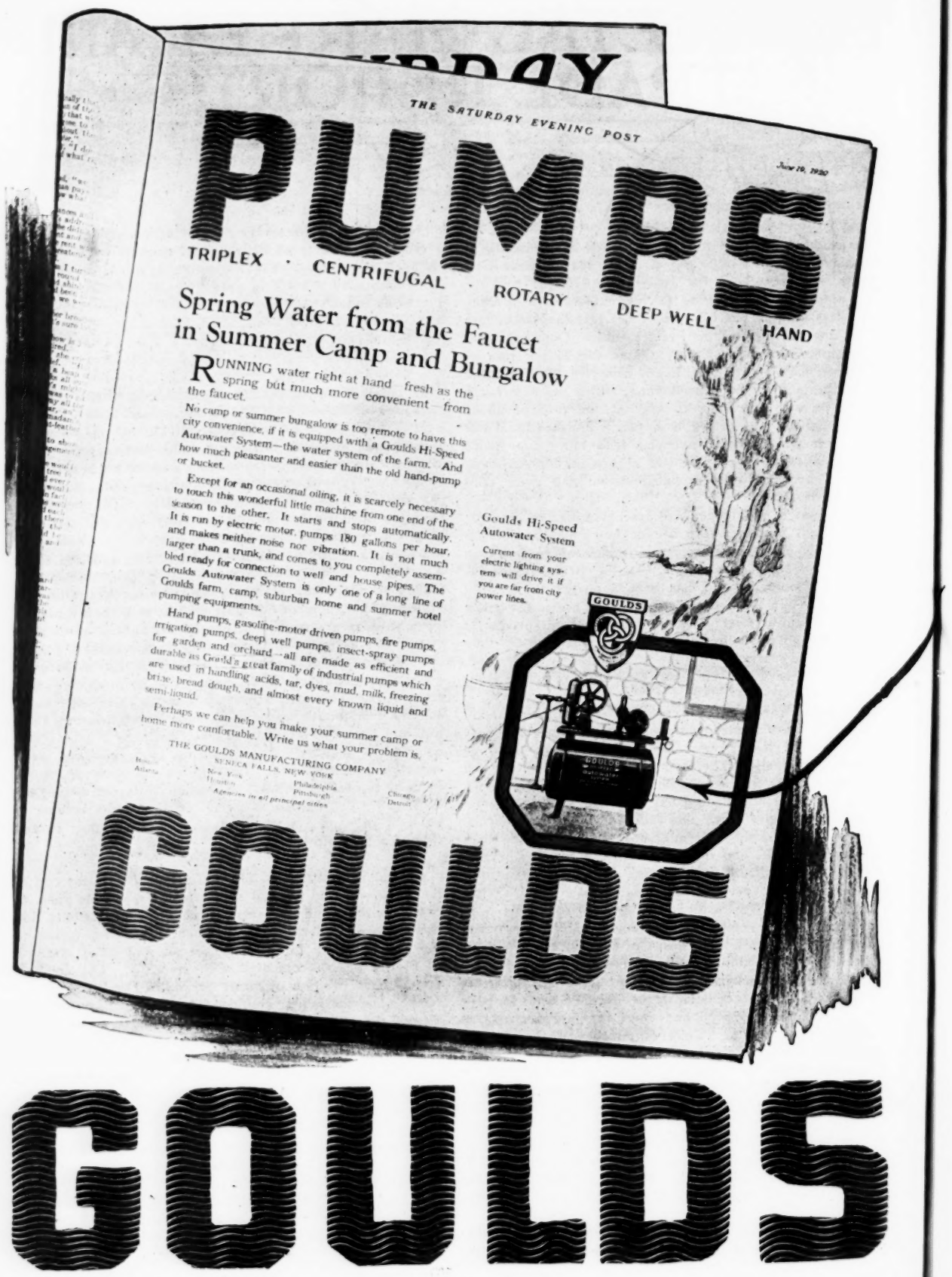
Tin.

The tin market was steady and unchanged at the end of the week with the price of 49½ cents for spot and June, 49 cents for July and 49 cents on all Straits shipments, but there was considerable improvement in feeling, owing to the fact that the London market showed good strength in Straits tin, as compared with standard. The comparatively good position of future Straits in London gives the New York market a confident feeling. Heavy sales of Banka tin in the British trade by bearish interests, together with forced liquidations, would naturally weaken the standard price, but have no great influence on Straits positions, and as we trade primarily in the latter in this country, the New York market naturally reflects to a greater extent the Straits price. While there is an abundance of Banka tin in England, the Eastern shipments are in heavier demand, and, therefore, in strategical position.

Lead.

The lead market is slowly gaining a firmer tendency because of the improved freight situation, as buyers show more confidence in deliveries and begin to sound the trade as to shipments and prices. More inquiries developed to-

(Continued on Page 504.)


THE SATURDAY EVENING POST
June 19, 1920
PUMPS
TRIPLEX · CENTRIFUGAL · ROTARY · DEEP WELL · HAND
Spring Water from the Faucet in Summer Camp and Bungalow
RUNNING water right at hand fresh as the spring but much more convenient — from the faucet.
No camp or summer bungalow is too remote to have this city convenience, if it is equipped with a Goulds Hi-Speed Autowater System—the water system of the farm. And how much pleasanter and easier than the old hand-pump or bucket.
Except for an occasional oiling, it is scarcely necessary to touch this wonderful little machine from one end of the season to the other. It starts and stops automatically. It is run by electric motor, pumps 180 gallons per hour, and makes neither noise nor vibration. It is not much larger than a trunk, and comes to you completely assembled ready for connection to well and house pipes. The Goulds Autowater System is only one of a long line of Goulds farm, camp, suburban home and summer hotel pumping equipments.
Hand pumps, gasoline-motor driven pumps, fire pumps, irrigation pumps, deep well pumps, insect-spray pumps for garden and orchard—all are made as efficient and durable as Goulds great family of industrial pumps which are used in handling acids, tar, dyes, mud, milk, freezing brine, bread dough, and almost every known liquid and semi-liquid.
Perhaps we can help you make your summer camp or home more comfortable. Write us what your problem is.
THE GOULDS MANUFACTURING COMPANY
SENECA FALLS, NEW YORK
New York Philadelphia
Pittsburgh
Agencies in all principal cities
Goulds Hi-Speed Autowater System
Current from your electric lighting system will drive it if you are far from city power lines.
GOULDS
GOULDS
GOULDS

Running Water
you can sell it

The convenience of running water is even more necessary to the fifty million people who live in rural America than it is to the fifty million town and city dwellers. On the farm, water has to be provided for horses, cattle, poultry, for the dairy and garage as well as for household uses.

Make a mental canvas of the farmers and owners of country and summer homes in your locality whose water supply is not what you would call modern. Most of these people own automobiles, talking machines and other modern day luxuries that indicate prosperity. Yet in many cases they still draw their water by hand.

Habit! It's a habit that a little well directed salesmanship can quickly change. Take this "tip"—*Sell running water.* Running water and electric light are altogether too indispensable to be dispensed with in this day and age.

With the Goulds line of pumping equipment on your floor and Goulds sales advertising and engineering service to back you up, you can build a business that will be substantial in itself and in addition will open up new markets for everything else you sell. There are Goulds Pumps for every service—for all industrial and municipal uses, for every pumping need on the farm.

The autowater system

AUTOMATIC. The electrically operated Autowater System once installed, in cellar or any out-of-the-way place can be practically forgotten. It is trouble-proof, noiseless, vibrationless and entirely automatic in its operation—even to the oiling.

AMPLE CAPACITY. The consumption of water on the average size farm with provision for all household uses and taps for barn, poultry houses, garage, feed lots, lawn, etc., is about one-tenth of the maximum capacity of the Autowater System which, equipped with ¼ h.p. motor, furnishes water at the rate of 180 gallons per hour.

A COMPLETE UNIT. The Autowater System comes to you and goes to your customers completely assembled, a simple compact unit comprising Goulds Hi-Speed Self-Priming Pump, Pneumatic Pressure Tank, ¼ h.p. Electric Motor and Automatic Control—all mounted on a 30 by 10-inch wood base.

EASILY INSTALLED. To put in operation you merely have to set unit in suitable place, connect three unions to inlet and discharge pipes, bolt two bolts, connect to the electric lighting circuit and switch on the current. It operates on city current or from lighting plant generator.

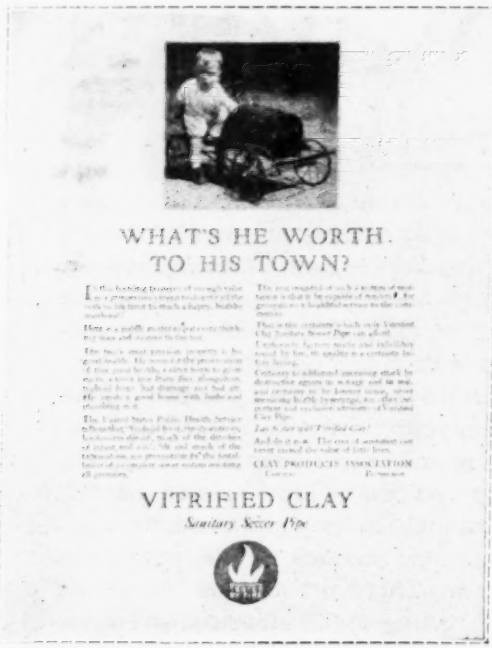
WRITE FOR PARTICULARS. You will get full information by return mail. We want the opportunity to put an Autowater System on your floor and to show you how to build successfully a big business in pumps in your locality.

A 72 YEAR SERVICE RECORD

Farmers, municipalities and manufacturers have been buying Goulds Pumps and Pumping Equipment in ever-increasing volume since 1848. This should mean something to the man with a pumping problem, as well as to the trade.

THE GOULDS MANUFACTURING COMPANY, Seneca Falls, N. Y.
Boston New York Philadelphia Chicago Atlanta Houston Pittsburgh Detroit

PUMPS



This gripping message appears in full page size in Literary Digest and Collier's

EVERY HOUSE CONNECTED WITH A SEWER!

"A sewer system in every town, a sewer in every street, every house connected with a sewer"—*100%* sanitation.

This is the guiding thought in the national advertising campaign of the manufacturers of Vitrified Clay Pipe. Your co-operation will help greatly to make this idea come true, and will bring you 30% more business.

CLAY PRODUCTS ASSOCIATION
CHICAGO PITTSBURGH

VITRIFIED CLAY

Sewer Pipe and House Drains

TESTED BY FIRE

THE METAL MARKET.

(Continued from Page 501.)

ward the close of the week, indicating probability of buyers' activity in the near future. The lead market has been stagnant for so long a period that it would take a sharp and progressive buying movement to give it necessary strength. Prompt lead is scarce and consumers desiring immediate shipment would undoubtedly be forced to pay a premium for good lots. The outside trade is quoting 8.70@8.85 cents for New York delivery, and 8.50@8.60 cents at East St. Louis, while leading interests are about 20 to 30 points under these figures.

Zinc.

The market is still in an unfavorable situation, as buying has not developed and consumers are showing little interest. Dealers are inquiring for foward delivery, but producers are not anxious to sell ahead under existing uncertainties. Improved traffic has helped to better sentiment in the trade. Prices are nominal at 7.50 cents nearby, and 7.55 cents distant position, East St. Louis, and 8 cents in New York.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots)	33 cents per lb.
Antimony (Chinese and Japanese)	10 cents per lb.
Solder, No. 1	38 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	14¼ to 14½ cents	15½ cents
Copper, light	13 to 13¼ cents	14¼ cents
Brass, heavy	9¾ to 10 cents	11 cents
Brass, light	7½ to 7¾ cents	8¾ cents
Brass turnings	8¾ to 9 cents	10 cents
Lead, heavy	7½ to 7¾ cents	8¾ cents
Tea lead	5 to 5¼ cents	6¼ cents
Scrap zinc	5 to 5¼ cents	6¼ cents
Solder joints	11 to 12 cents	13 cents
Mixed babbitt	10 to 12 cents	13 cents
Composition turnings	13¼ to 13½ cents	14½ cents
New brass clippings	10½ to 11 cents	12 cents
Tin foil	34 to 37 cents	38 cents
Cast aluminum	23½ to 24 cents	25 cents
Cocks and faucets	12 to 12½ cents	13½ cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

Heavy yellow brass	11 to 11½ cents	12½ cents
Brass, light	9¾ to 10 cents	11 cents
Brass borings	14½ to 15 cents	16 cents
Brass turnings	9½ to 10 cents	11 cents
Red brass	15¾ to 16¼ cents	17¼ cents
Copper, crucible	16 to 16¼ cents	17¼ cents
Copper, heavy	15 to 15¼ cents	16¼ cents
Copper, light	13 to 14 cents	15 cents
Lead, heavy	7¼ to 7¾ cents	8¼ cents
Tea Lead	5 to 5¼ cents	6¼ cents
Zinc	5 to 5½ cents	6½ cents
Solder joints	10½ to 11 cents	12 cents
New aluminum clippings	25 to 26 cents	27 cents
Cast aluminum	23½ to 24 cents	25 cents
Block tin pipe	47 to 49 cents	50 cents
Tin foil	37 to 39 cents	41 cents
Mixed babbitt	7½ to 8 cents	9 cents

The Mahoning Valley Association of Master Plumbers will hold its annual outing on Saturday, July 17th, at Packard Park, Warren, Ohio.

TEXAS MASTER PLUMBERS IN ANNUAL MEETING AT FORT WORTH.

(Continued from Page 498.)

Extension Bureau to help defray the expenses of the representative sent by the Bureau to enlighten the delegates.

After the report of the Mileage and Per Diem Committee was read, which called for the payment of five cents a mile for each member attending the convention, a recess was taken, at which time a meeting of the board of directors was called.

Wednesday Afternoon Session.

An executive session marked the opening of the Wednesday afternoon session, after which President Clifton talked on the plumbing business and the ways in which betterment could be brought about. President Clifton also announced that the differences with the Fort Worth master plumbers had been patched, and that they had all signed up with the state association.

Election of Officers.

The election of officers was then in order and resulted as follows: President, W. C. Clifton, Houston; vice-president, Ed Eastham, Beaumont; treasurer, N. S. Hill, Waco; secretary, Lee Rogerson, Houston.

Board of directors, one-year term: C. M. Desmukes, Port Arthur; A. Collmann, San Antonio; J. F. Madden, Sherman; C. F. Herrington. Two-year term: A. E. Hancock, Austin; Joseph Netzer, Laredo; W. H. Schutte, and R. J. Hunter, Corpus Christi.

Ed Eastham and Joseph Netzer were selected as delegates to attend the National convention, with Mr. Montrief and Harry White as alternates.

Waco was selected as the next meeting place.

Entertainment.

Following the Tuesday afternoon session a fish fry was served to the delegates at the Lake Worth roadhouse. This affair proved most enjoyable for the afternoon was an ideal one for such an occasion, and the trip by automobiles to the scene was in perfect harmony. The ladies were entertained at a theater party in the afternoon.

A banquet and ball for the delegates and their families were given at the Metropolitan Hotel. This occasion, too, proved a great success in every respect.

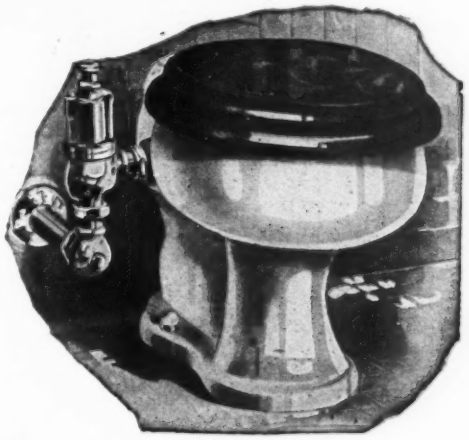
WASHINGTON MASTER PLUMBERS CONVENE IN BELLINGHAM.

Two-Day Conclave Shows Importance of Associational Work; Much Constructive Action Taken; All Officers Re-elected.

THE twenty-fifth annual convention of the Association of Master Plumbers of the State of Washington, held in Bellingham, on May 21st and 22nd, will go down as the brightest and most profitable, so far in the history of the organization. The sessions, from the first until adjournment was taken, were crowded full of constructive action, and benefit could not but accrue to all those who were fortunate enough to be in attendance.

Some of the most interesting talks given at the convention were accredited to William J. Woolley, secretary-manager, of the National Trade Extension Bureau; Frank J. Klimm, of San Francisco, a director in the National Association; and A. M. Goddard, of Tacoma, a prominent worker in the association.

The delegates to the convention were welcomed to the city by Mayor E. T. Mathes of Bellingham. A response was given by William F. Eckart, of Seattle. All sessions were presided over by P. J. Lavan, president of the asso-



Cleveland Flush Valve

Made with Push Button, Lever and Oscillating Handle.

Guaranteed for Five Years of Satisfactory Service

There is no installation too large or too small for the Cleveland Flush Valve. It is adaptable to any style bowl, fits all standard equipment and is readily adjustable to any water pressure.

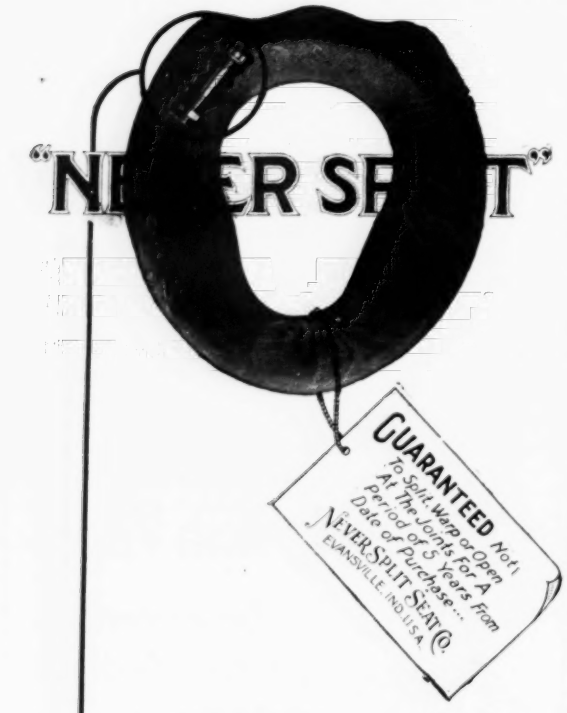
Operates easily and quietly. Gives any desired number of flushes in immediate succession. Economical in use of water.

If you are not familiar with the Cleveland Valve, it will pay you to try it on your next contract.

Write for Booklet showing the different styles of Cleveland Valves

Cleveland Flush Meter Company

Noble Court and West Second St. CLEVELAND FLUSH-VALVE Cleveland, O.



SALES BOOSTER

Your sales depend upon the satisfaction you give your customers. If you sell them a NEVER SPLIT with its nut, bolt and washer construction, quarter sawed oak and "NO KORODE" hinge, you are bound to boost your sales.

Furthermore there are no strings attached to the five-year guarantee that goes with every "NEVER SPLIT" Closet Seat.

Write us for construction model, finished sample and copy of our guarantee.

NEVER SPLIT SEAT CO.
EVANSVILLE, IND., U.S.A.

The Largest Makers of Closet Seats in the World

ciation. The meetings were held in the spacious club-rooms of the Eagles Hall.

Headquarters for convention delegates was maintained at the Hotel Leopold, where the banquet closed the social features of the convention. The banquet was featured by several extremely clever and interesting talks given by William F. Eckart, toastmaster, and Ben Finnigan and D. G. Rushlight, of Portland, who attended the convention as representatives of the Oregon Master Plumbers' Association. The historical and pictorial talk of A. M. Goddard of Tacoma, who is historian of the Washington Association, was particularly well received. His selections of pictures, and his comments which accompanied the showing of the views taken at previous conventions, elicited the enthusiastic appreciation of his hearers. Following the banquet, a very delightful dance was held at the Kulshan Club.

At the last session of the convention, the following officers were elected for the ensuing year:

President, P. J. Lavan, Seattle; vice-president, G. A. Sutherland, Walla Walla; secretary, B. M. Richards, Everett; treasurer, A. M. Goddard, Tacoma.

The members of the board of directors of the association are: James Griggs, Tacoma; E. H. Norton, Seattle; R. M. Westover, Everett; G. H. Sutherland, Walla Walla; Jerry J. Ward, Seattle and J. E. McCormack, Spokane.

Illinois

Chicago and Vicinity.

Hulbert & Dorsey, 212 West Lake Street, and Phillips Getschow Co., 130 West Kinzie Street, have been awarded the contracts for the installation of plumbing and heating, respectively, in the new $2,000,000, sixteen-story building that is to be erected at 400-412 North Michigan Avenue for William Wrigley, Jr. This building will cover an area of 21,942 sq. ft., and will be one of the most modern structures now under construction in this city.

The Chicago Steam Heating Co., 565 West Washington Street, has secured the contract to install the heating system in the $150,000, one-story garage building which will be built for E. C. Waller, Jr., on Huron Street, near La Salle.

P. Nacey Co., 927 South State Street, is to install the heating in a new office building now under construction at Fifty-second Avenue and Nineteenth Street, Cicero, for the Vitanola Talking Machine Co. This building will be 34x200 ft., and will cost $75,000.

M. J. Corboy Co., 178 West Randolph Street, has the contract for the installation of plumbing in the $200,000 manufacturing plant to be erected for the Arbor Mfg. Co., at Fifty-fourth Avenue and Sixteenth Street, Cicero.

H. Swade, 2448 South Hamlin Avenue, has been awarded the plumbing installation contract on the new postoffice building which is now under construction at Twenty-second Street and Sixtieth Avenue, Cicero.

The Advance Heating Co., 110 North Desplaines Street, will install the heating in a new $18,500, one-story residence that is to be erected at 3931 Eddy Street for the Rev. C. F. Stominski.

L. Pettikoske, 4822 West Twenty-fifth Street, has been awarded the contract to install plumbing in a $15,000 store and flat building to be erected for T. M. Filas at 5241 West Twenty-fifth Street.

Other Cities in the State.

C. D. Jones, LeRoy, has the contract for the installation of plumbing in the new township high school for LeRoy. The board of education of that city will expend $200,000 on this structure.

The Lawrence Plumbing Co., East St. Louis, is to install the plumbing in the two-story addition to the Fairmount Village school building in Fairmount Village.

Hitchcock Bros. Co., Peoria, has secured the contract to install the plumbing and heating in a $20,000 residence and garage to be erected in that city for Mrs. J. Ohl.

Pennsylvania

Pittsburgh Ready to Welcome the Annual Convention of the N. A. M. P.

Pittsburgh is waiting with open arms to receive the delegates to the coming convention of the National Association of Master Plumbers, commencing here on next Tuesday, June 15th. President S. A. Patton, of the Pittsburgh Master Plumbers' Association, after surveying the situation this week, gives it as his opinion that this will be the largest and most enthusiastic convention the organization has ever held. Secretary John H. Keane, who has been one of the most active workers for the success of the event, heartily coincides with the view of the president.

The local craftsmen realize the importance of the present convention. Many of them say they believe their fellow employers from all parts of the country also realize it. This indicates, they say, a large and enthusiastic meeting in Pittsburgh and discussions that will be of inestimable value to all members of the craft.

The convention sessions are to be held in the William Penn Hotel, the largest and most accessible in the city, and, according to the Committee on Reservations, accommodations have been held for members from the Atlantic to the Pacific Oceans and from the Gulf to the Dominion of Canada. The committee reports that more reservations have been asked for than has ever been the case before.

Many excellent features have been provided by the Committee on Arrangements, including social events that will be attractive, to all the visitors, as well as their families. Included in the list are receptions, dances and theater parties, which will give visitors an opportunity of partaking of some of Pittsburgh's notable entertainments.

One of the most important events in connection with the convention will be the big Sanitary and Efficiency Show, of sanitary products and equipments at Motor Square Garden, to which the general public, as well as all the members of the association will be invited without charge. This event is in charge of a committee composed of President Patton, of the master plumbers, chairman; John H. Keane, secretary; Jos. A. Weldon, of Weldon & Kelly; Morris Ebersole, American Radiator Co., Chicago; Joseph T. Sullivan, Thos. Maddock's Sons Co., Trenton, N. J., and C. B. Nash, of the Standard Sanitary Mfg. Co., Pittsburgh.

The United States Department of Mines, the Household Department of the Pittsburgh Board of Education, Carnegie Institute of Technology and the United States Department of Agriculture will co-operate with the local committee in making the show a great success.

There will be 105 exhibits. A large section of the center of the Garden has been set aside as a social center. Music will be provided by a brass band afternoon and evening. The show will be open from June 14th to June 19th, inclusive.

Headquarters will be established at the William Penn Hotel, on Monday to assist arriving members of the association in getting located. President Patton will personally supervise the arrangements for receiving the visitors and nothing is to be left undone that will contribute to the comfort, convenience or pleasure of the visitors.

Pittsburgh and Vicinitv.

Building conditions in the Pittsburgh district have been brought to a serious crisis within the past week by the determined stand that has been taken against further wage increases by the Building Construction Employers' Association. This includes practically all of the important interests connected with the Builders' Exchange.

Even if building has to be brought to a complete standstill, declare the employers in a public statement just issued, they will refuse the most recent demands of bricklayers, carpenters, steamfitters, roofers, hod carriers and common laborers for another increase. The employers are now openly defying the labor union organizations and have united in a lengthy appeal to the people for moral support in their efforts to break the circle of advancing wage scales. "We ask the public to bear with us," say the employers, "in an effort to put an end to building inflation, that the people may obtain comfortable homes without paying exorbitant prices, nearly 70 per cent of the cost of which is represented in labor."

WOOSTER CHINA

PLATE NO. 55

One Minute, Please! Mr. Jobber

Are You

getting your share of Closet Business on New Factory Buildings?

By introducing and featuring the Wooster Factory Closet Bowl with Seat Integral and Non-Soiling Features, you will be creating an advertising campaign which will mean a healthy increase in sales.

The elimination of the wood seat on water closets in factory installation is a step forward in factory sanitation.

Write Today for Prices

The Wooster Sanitary Co.

Clarksburg, V. Va.

PLANTS:

Clarksburg, W. Va.
Fredericksburg, Ohio

MANUFACTURERS OF

Plumbers Vitreous China Earthenware

Who Builds Bigger Business?

Jones the Plumber wrote Bill

Dear Bill:

What is it that builds retail business; if you get this angle right you will never come to grief.

The Trade Extension Bureau will tell you how, and so will a lot of manufacturers; but get that Bill, they'll *tell* you, you're the fellow that *does* the work. A well known salesman once said, "success is usually due to 20 per cent inspiration and 80 per cent perspiration," and believe me he said something.

Kenney Showers cut down a little of the perspiration. Their national advertising sort of paves the way; I find most of my customers know something about them; usually I can close the deal without much work.

Yours,

J. J.

Write for Kenney Shower Sales Plans. They are in keeping with the Trade Extension idea. Over a thousand merchant plumbers are now making extra profits through the aid of these plans.

THE CURTAINLESS SHOWER COMPANY

507 FIFTH AVENUE - - NEW YORK

The statement further sets out that cheaper rents and lower-priced building construction cannot be obtained by continuously advancing wages. A compromise advance was offered the trades unions, but it was rejected. As a result building operations in the Pittsburgh district are virtually at a standstill, with the public demanding more houses and cheaper homes. "We have taken a determined stand to pay no more," declare the employers in their public ultimatum, "and have received congratulations on every hand for the decision we have made."

At the Builders' Exchange recently it was estimated that a six-room modern dwelling, good, but not pretentious, which contractors formerly figured to cost $1,000 a room, or $6,000 for the house, cannot now be built inside of $2,000 a room, or $12,000, some of the various costs, labor, etc., having just about doubled.

Secretary E. M. Tate, of the Builders' organization, says it is the intension of the organization to stand by the new scales submitted recently to the trades unions, even if it is found necessary to postpone further operations indefinitely. The proposed agreement carries the usual provision that eight hours shall constitute a day's work, and that pay at double the rate agreed upon shall be given for overtime, for Saturday afternoons, after midnight and for Sundays and holidays.

Bids are being received by Architect Pringle, Mellon Bank Building, for the plumbing and heating in the Oriental Restaurant on Sixth Street.

Other Cities in the State.

John Cunningham, Wilkes-Barre, has recently moved his plumbing business from 138 Wood Street, to 63 Orchard Street.

John T. Roberts, 238 Church Street, Luzerne, has secured the contract to install plumbing and heating systems in a large dwelling house that is to be erected in Dorranceton.

Frank Baab, 346 South Main Street, Wilkes-Barre, is installing the plumbing and heating in the one-time B. I. A. building, but now occupied by the American Legion Post of that city. He also will install the plumbing and heating in a three-apartment building.

Robert W. Kline has recently opened a plumbing and heating shop in Coopersburg, and states that business is good in that section.

Wells & Doan have opened a plumbing and heating establishment at 223 West Main Street, Coatesville, and have secured contracts for several large jobs.

Hill & Evans, Nanticoke, are installing plumbing and heating systems in the nurses' home and in a school building, both of which are being erected in that city. The contract for installation of plumbing and heating in the new school house for Glen Lyon has also been secured by this firm.

A. E. Myers, 124 North Fifth Avenue, Coatesville, has recently finished the installation of plumbing and heating in four houses, and in the Chester Valley National Bank Building in that city.

John J. Cawley, 23 South Main Street, Pittston, has secured the contract to install the plumbing and heating in the new St. John's High School and parish house that is to be erected in that city. The contract amounts to $35,000.

Peter Forve, 114 North Main Street, Wilkes-Barre, recently completed the installation of the plumbing and heating systems in the new silk mill at Plains.

A. L. Shainline, 745 Willow Street, Norristown, is installing the plumbing and heating in nine houses now under construction for the Norristown Pattern & Machine Co.

Tennessee

Memphis.

The Fisher Heating Co., 51 South Third Street, Memphis, is installing heating systems in the Standard Drug Co.'s Building, the Wiedemann Cafe Building, the J. H. Perrins residence and in the First Baptist Church, being erected in Laurel, Miss.

The Hobbs Plumbing & Electric Co., Memphis, has secured the contract to install plumbing in eleven houses and the offices and mill for the Du Bois Lumber Co.

Massachusetts

President G. Wilbur Thompson Announces His Cabinet.

President G. Wilbur Thompson, of the Massachusetts State Association of Master Plumbers, has announced the personnel of his board of directors for the current year as follows: William H. Sullivan, Fall River; Daniel F. Carroll, Lowell; Charles F. Peck, Greenfield; Edwin W. Cox, Boston; Thomas W. Farrell, Brockton; William J. Hyland, Springfield; J. S. Kinsman, Framingham; Daniel F. Loan, Worcester; J. E. Ludden, Weymouth; William McAree, Haverhill; and William Milne, Pittsfield.

Standing committees for the year are as follows:

Conference—President Thompson, Newton; Ex-President Carroll, Lowell; Treasurer J. Preston Perham, Boston.

Legislative—John J. Mullaney, Lowell; National Past-President James S. Cassedy, Cambridge; Ex-President Andrew F. Curtin, Medford; Ex-President J. B. Feehan, Lynn; E. C. Kelley, Boston.

Essay—R. E. Dockham, Salem; Harry Lloyd, Springfield; Edward C. Kelley, Jr., Boston; H. W. Orr, Newton; Walter Skinner, Braintree.

Sanitary—L. E. Andrews, Gloucester; D. J. Whooley, Fitchburg; John J. Hickey, Worcester; J. H. Reynolds, Stoneham; Walter B. Wolcott, Newton; George A. Stewart, Lowell.

The new board of directors held its monthly meeting at the Boston City Club on Tuesday of this week.

Boston and Vicinity.

The Massachusetts delegation to the annual convention of the National Association of Master Plumbers will leave Boston on Sunday, June 13th, and will be gone more than a week. There will be about twenty-five in the party, traveling by special car, and at the close of the convention they will visit Buffalo, Niagara Falls, Toronto and Montreal, returning to Boston June 21st. Several ladies will be in the party.

William H. Sullivan and James H. Trow, who retired in April as president and secretary, respectively, of the State Association of Master Plumbers, have been presented with handsome remembrances by the association. Mr. Sullivan was given a beautiful electric piano lamp and Mr. Trow a pair of binoculars, something which he admitted he had always wanted. The gifts were presented at a meeting of the new board of directors, the presentation speech being made by Thomas W. Farrell, of Brockton.

The Massachusetts North Shore Association of Master Plumbers is having a busy season. Since the annual state meeting early in April, at which the full significance of the work of the Trade Extension Bureau was explained by Secretary-Manager Wm. J. Woolley, the North Shore Association has taken up the study of extension work in real earnest. Two meetings a month have been held, several times with 100 per cent attendance and always with at least 90 per cent of the members present, and much enthusiasm has been aroused. At the last meeting two new members were admitted, John Powers and E. G. Kelly, both of Peabody. It is planned to continue the meetings of the association right through the summer, although only one meeting a month will be held in July and August. The association also is beginning to plan for the midsummer outing, always an important event with the North Shore masters. A committee has been named to arrange the details.

The Highland Plumbing Co., of 1332 Columbus Avenue, Boston, conducted by Edward D. O'Brien is among the new business concerns in the city.

Other Cities in the State.

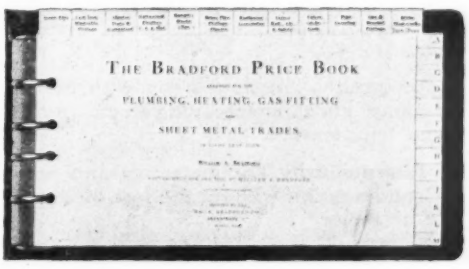
The Wyckoff & Lloyd Co., of Springfield, has purchased a lot of land on the west side of Boylston Street in that city as a site for a new building for its plumbing and heating business.

The plumbing and heating systems in the Green district school at Westfield has been condemned by the state inspector, and the school board will take immediate steps to correct the trouble.

Turn on the Searchlight

Why work in the dark and trust to luck on making profits, when it is easier and less trouble to be right than wrong?

Start out right by having correct prices on your estimates and see that every item you re-sell is priced to net its share of profit. The way to do this with the least amount of labor and expense, and to be certain of results, is to use the



BRADFORD Price Book

The Cost, Net and Resale prices are carefully worked out for you. Simply refer to each item and copy the figures. You can't go wrong, either on billing or estimating.

For $15 you get the Price Book complete and one year's revision service free. This keeps you informed on price changes as they occur. Renewal subscription, $12 a year.

Send us your check today. Examine the book and if not satisfactory, return within six days and your money will be refunded.

Write on your letterhead for free sample sheets.

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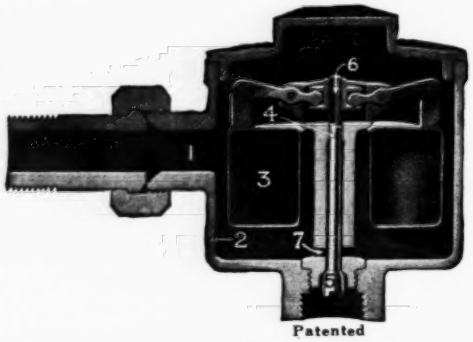
ROOM 2, BRADFORD BLDG.
11 Maple St., Quincy, Mass.

McDONALD UNDER SEAT VALVE

Only Valve of Its Kind on the Market



Patented

A RADIATOR equipped with the McDonald Under-Seat valve heats up more quickly. It does away with hissing, cracking, knocking, escaping steam and uneven temperature.

Automatically eliminates air and water of condensation without the loss of a particle of steam.

Special features of the McDONALD Under-Seat Valve:

1. Automatically self-cleaning.
2. Carries away all scale.
3. The entire inside of valve instantly removable by loosening a cap.
4. It is an absolute fact that the McDonald Under-Seat Valve will handle and discharge a much larger quantity of water than any other trap or valve of equal size.
5. Gives perfect service on any radiator, connected on a two-pipe heating system and under any pressure ordinarily met with in any heating, up to and exceeding ten pounds.
6. It will take care of condensation of any radiator, having a direct heating surface of 300 sq. ft. or less.

The McDonald Under-Seat Valve eliminates the biggest heating troubles that architects, heating engineers and contractors have to deal with.

For further details write

The McDonald Under-Seat Valve Co.

602 Swetland Building,

Cleveland, O.

Connecticut

Hanlon & Murphy, of 538 Asylum Street, Hartford, has the contract for plumbing in a two-family house being erected on Eaton Street in that city for F. G. Neilson.

The Bryant Electric Company is to erect two large new buildings in Bridgeport, one of which cost about $60,000 and the other $140,000. J. Reilly, Jr., of Bridgeport, has the contract for the plumbing in the latter building.

M. J. Ford, of Bridgeport, will do the plumbing and heating in a recreation house soon to be erected on Stratford Avenue near, Seaview, in that city, for the City of Bridgeport.

Ames & Hacker, of Fort Fairfield, Me., has been incorporated to do a general plumbing, heating and hardware business with an authorized capital of $200,000. The incorporators are C. Fred Ames, president; Tom E. Hacker, treasurer, and Melvin P. Roberts, secretary.

M. J. Daly & Sons, Inc., of Waterbury, has the contract for heating, and P. E. Ogiresh the plumbing in connection with extensive alterations being made in the Margolis Building on North Main Street, in that city.

New York

New York City and Vicinity.

Local plumbing and heating contractors are awaiting with interest the completion of plans for the New York Telephone Co.'s mammoth construction program which will involve an aggregate outlay of $26,000,000. The telephone company needs one million additional square feet of space to take care of its growing business, and has already begun the erection of four new buildings, and additions to nine existing properties in Manhattan and the Bronx, and one new building and six additions to existing structures in Brooklyn, Queens, and Richmond.

The rest of the program, calling for thirteen new buildings, twenty-three additions, and twelve major alterations, at a total cost of $20,000,000, will be put through as soon as conditions permit.

Plans are now being drawn, but none of the heating and plumbing contracts, of course, have as yet been awarded, and the field is open to every contractor who wishes to bid for the work.

As most of this construction work is for new telephone exchanges, and the company has always boasted of the consideration it gives to the comfort of the thousands of young women, who operate its switchboards, the plumbing and heating work on these jobs will naturally run into large figures. In all of the buildings shower baths will be provided for the use of the telephone girls.

One of the largest of these buildings will be an eight story structure in the Murray Hill section, to cost nearly $2,000,000. This building will add 175,000 square feet of space to the company's housing facilities.

Another of the projects is an eight-story addition to the Bowling Green Building, at 104 Broad Street, which will provide 95,000 sq. ft. of new floor space to help accommodate central office and other equipment to take care of a telephone service in the heart of the financial district that has more than doubled in the past five years.

Even the alteration work in the company's $26,000,000 construction program will mean heating and plumbing contracts that will run into big figures. Bidding by the local contractors is therefore expected to be keen.

James Armstrong, 219 East Thirty-eighth Street, has been awarded the plumbing contract for what will probably be the largest concrete building in New York City. This structure, which is to cost $3,000,000, will stand on the entire block bounded by Hudson, West Houston, Greenwich and Clarkson Streets, and will consist of 583,000 sq. ft. of floor area. It will be partly an eleven-story office building, and partly a five-story and basement warehouse, and will be of reinforced concrete throughout, with the exception of a veneer of brick on the exterior walls. McKenize, Voorhees & Gmelin are the architects. They say that they are

not ready as yet to announce who has been awarded the heating contract, as the matter has not been quite settled.

Another concrete structure, a ten-story and basement loft building, is to be erected on Varick Street, between Grand and Watt Streets. O'Keefe & Sons will do the plumbing work on this building, and John C. Williams has the heating contract. The architects are Helmle & Corbett.

These two projects mark a new departure in industrial construction work in New York, where, until now, reinforced concrete has not been used to any extent for loft and office buildings. Following the example of the middle western, southwestern, southern and far western cities, New York operators are now beginning to turn to this material instead of to structural steel for buildings under twelve stories in height, because of the tremendous saving in cost thus effected.

With the present labor and material price situation, possible economies, which the use of reinforced concrete offers, have impressed themselves strongly on local construction interests. It is estimated that the two buildings mentioned above will be erected at 20 per cent less than if they were built of the conventional steel and brick.

The great strength and almost perfect fireproofness of this type of building are other advantages which recommend it strongly and, now that the start has been made, many more reinforced concrete building projects are looked for. In fact, several are already being planned.

One point of interest about a concrete structure, from the heating contractor's standpoint, is that there are no holes to be drilled through the floors for the installation of the heating system. The floors, too, are of concrete, and the holes for the heating system are part of the original design when the material is laid.

"For the first year it is harder to heat a concrete building than one made of other materials," said John C. Williams, who is doing the heating work on the Varick Street structure. "But this simply means burning more coal, and presents no engineering problem. After its first birthday anniversary the concrete building is just as easy to heat as a structure of brick and iron."

New York Building Construction Situation Still in Critical Condition.

Although the local construction interests were generally inclined to be optimistic, last week, regarding the outlook, recent developments have not had the effect of heightening their enthusiasm.

The transportation tieup here continues to present serious obstacles to the progress of building operations, and the threat of a general strike as a result of the fight between the Merchants' Association and the truckmen makes the immediate future of the local construction industry look rather gloomy at this time.

Whether the longshoreman's strike—the original cause of the local transportation tieup—is settled or not, the merchants of this city have announced their determination to carry through their plan to form an independent trucking organization, and a permanent agency for the maintenance of impartial transportation service "regardless of whether it has been worked upon or handled by union or non-union men." They are raising a $5,000,000 fund for that purpose.

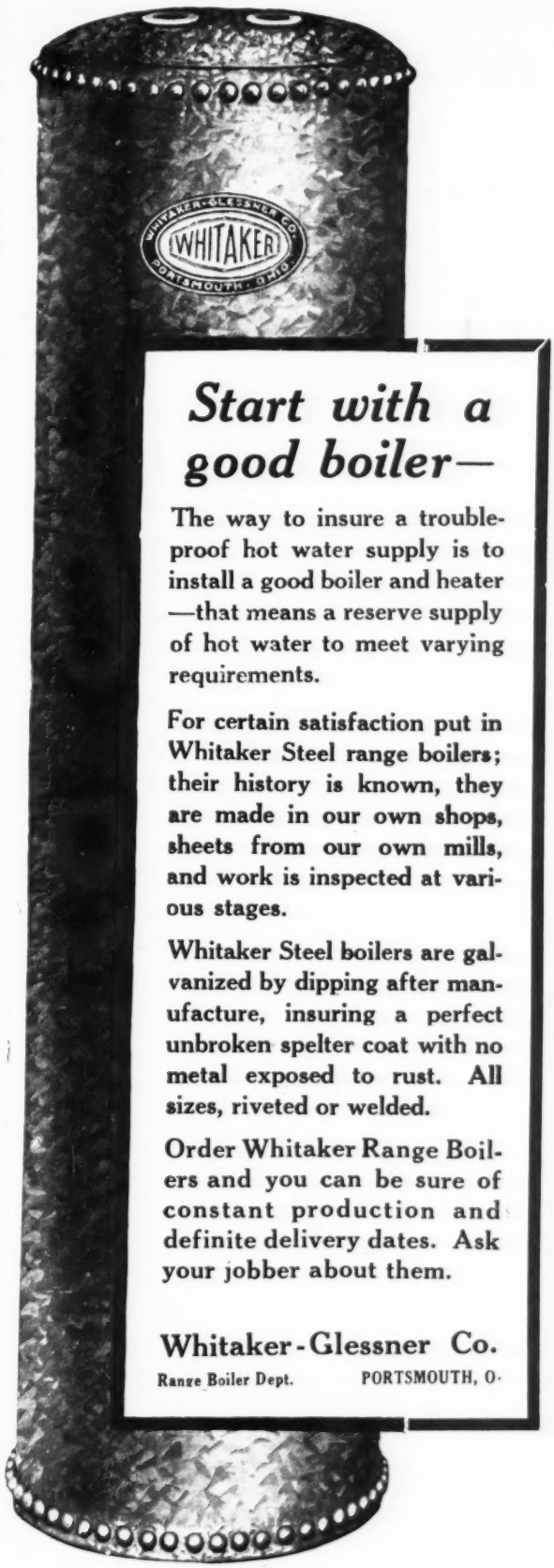
The truckmen's unions denounce this move as an attempt to introduce the open shop, and vow that, unless it is dropped, they will precipitate a general strike, which will paralyze the business of the entire city.

As both sides appear to be doggedly determined in their stand, the building industry is viewing the situation with great uneasiness.

The car shortage is another factor which is adding to the troubles of the local construction interests. While there has been some easement of the general railroad situation, and food and fuel are now being moved more freely into New York, cement, steel, lumber and other building materials are still being held back. For some unfathomable reason the powers that be still insist on classifying them as "non-essentials."

Moreover, Governor W. P. G. Harding, of the Federal Reserve Board, has further "gummed" the situation for the construction industry by omitting housing from his list of basic necessities of life which should receive preference in loans, which has been sent out to the Federal Reserve banks.

M. Morgenthau, Jr., a prominent local real estate operator, has addressed an open letter to the governor of the Federal Reserve board, calling his attention to this omission and protesting that unless something is done quickly to encourage a revival of the building industry, in so far as it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Start with a good boiler—
The way to insure a trouble-proof hot water supply is to install a good boiler and heater —that means a reserve supply of hot water to meet varying requirements.
For certain satisfaction put in Whitaker Steel range boilers; their history is known, they are made in our own shops, sheets from our own mills, and work is inspected at various stages.
Whitaker Steel boilers are galvanized by dipping after manufacture, insuring a perfect unbroken spelter coat with no metal exposed to rust. All sizes, riveted or welded.
Order Whitaker Range Boilers and you can be sure of constant production and definite delivery dates. Ask your jobber about them.
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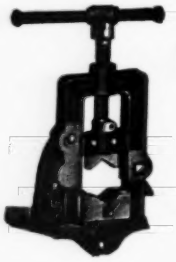
THE GENUINE ARMSTRONG

HINGED  PIPE VISE

Has Been Imitated Many Times
But Never Improved
on the Original

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THE ARMSTRONG MFG. COMPANY
284 Knowlton St., Bridgeport, Conn.

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99 40/100% PERFECT

This record has been made by the "Parabal" in actual performance

Accurate figures, compiled from our office records prove conclusively that of the many thousands of

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The Standard Tank Ball of America

sold and used, 99 40/100% have outlived the guaranteed term of two years of satisfactory service.

Your customers will appreciate that kind of service

Woodward-Wanger Co.
Philadelphia, Pa.

pertains to housing, "we shall soon face a situation besides which the present cry of the high cost of living will be insignificant."

In his letter to Governor Harding, Mr. Morgenthau says:

"In your statement, dated May 24th, you are quoted as saying: 'The board is insisting that all banks use a discriminating judgment in making loans, giving preference to those which are necessary for the production and distribution of the basic necessities of life, such as clothing, food and fuel. In the exercise of this discrimination it is necessary to have the restraining influence of a rate.' It certainly is strange that you do not include housing among the 'basic necessities of life.'

"Unless something is done and done quickly to encourage a revival of the building industry, in so far as it pertains to housing, we shall soon face a situation besides which the present cry against the high cost of living will be insignificant. Under these circumstances it seems evident that it is the patriotic duty of the Federal Reserve Board to make a study of this situation and to assist in preventing such a crisis.

"I realize fully that the Federal Reserve banks cannot undertake to finance the construction of homes with permanent mortgages. Their funds must be kept liquid, while it is the function of the saving banks, insurance companies and other institutions which have funds for permanent investments to take care of these permanent loans. On the other hand, there is no reason why the Federal Reserve banks should not be encouraged to make the temporary loans which these builders require during construction and which afterward will be refinanced with permanent loans by these savings banks and other institutions. They should also lend liberally to builders who are constructing homes on contract and who require temporary credit to carry out these operations.

"May I urge the importance of a statement to the banking fraternity calling attention to the critical condition of the housing situation and the imperative need for additional construction, together with a statement that you did not intentionally omit housing from your list of the basic necessities of life? It may also be advisable for you to state clearly that housing construction is dependent on bank credits, and that you consider loans to those engaged in the industry which is supplying this necessity 'essential loans' and worthy of every encouragement at this time."

James McCullough, 238 West Thirty-sixth Street, will do the plumbing work on the $200,000 residence, garage and boiler house to be built for Theodore Pratt, of the Pratt Institute, at Glen Cove, L. I. The plumbing contract will amount to about $20,000. The Lawton Co., of Rutherford, N. J., has the heating contract.

Wells & Newtown, who are handling the plumbing work on the $100,000 office building, now being erected at 62 Broad Street, are making a record in the speed with which they are doing the job. Although the building is far from finished, their end of the contract is now almost completed.

Elmira.

The Ellett-Stempfle Co., 112 Lake Street, Elmira, New York, uses a novel advertising stunt to develop business. Eight paper drinking cups are clipped together at the top and enclosed in a yellow cover, open on all sides except at the top. On one side of the cover are the words "Safety First," together with the company's name and address. On the back is the company's telephone number, a cut of a modern kitchen sink, and above that "Satisfactory Heating and Plumbing."

Mississippi

Hattiesburg and Vicinity.

J. Smith, 220 West Pine Street, Hattiesburg, has been awarded the heating and plumbing contract on the girls' dormitory building of the Agricultural High School, and the plumbing contract on the residence being erected on Hardy Street, for F. L. Matheson.

J. L. Andres, Vicksburg, is to install the plumbing and heating in twelve residences being erected in Tallulah, La., Dr. Darden's residence in Blanton, Miss., and a residence in Vicksburg and in a three-story office building now being erected in Vicksburg.

Gulfport.

Hamilton Bros., Gulfport, have the contract for the installation of plumbing and heating in the Gulfport College

Building, and are installing the plumbing and heating in the Gulfport River State Improvement Co.'s building, and in a residence being erected in that city for H. Piaggio. They have recently completed the installation of heating in the Wiggins School building.

The Home Plumbing Co., Gulfport, is to install the plumbing in the H. T. Cottam Co.'s building, and the new Dixie Theater. The company has just completed the plumbing in the Griffith Building, and in the bath houses for the Gulfport Amusement Co.

Other Cities in the State.

A. B. Hayden, Pass Christian, has been awarded the plumbing contract on a residence to be erected in that city for H. Roundtree. The plumbing and heating contracts on four other new residences in that city have also been secured by Mr. Hayden.

The Biloxi Plumbing & Heating Co., Biloxi, has been awarded the contract to install plumbing and heating in the new Academic Building for the Gulf Coast Military Academy, the Biloxi Hotel addition, and in three residences. The plumbing contracts on nine residences have also been secured by this company.

Kentucky

Louisville and Vicinity.

J. J. Bosemer, of Louisville, is very busy this spring, and is assured a good run through the summer months, having the L. Jacobson contracts. The latter is building a large number of small residences, and Bosemer for several years has been doing the plumbing on the hundreds of residences built by this contractor.

Due to the shortage of journeymen plumbers there has been a fine co-operative spirit shown in Louisville, plumbers helping one another out with men, and master plumbers even donning overhauls and going on jobs to help out brother members. W. H. Matlack reported that he had three master plumbers helping him on remodeling an old building into three apartments for himself, in which the plumbing alone ran to $1,600. Mr. Matlack also has a good contract on the Louisville Baptist Orphanage, a remodeling job.

The Haller, Zehnder & Redmon Plumbing & Heating Co. is still very busy on the Atherton building, and has half a dozen other good contracts well under way.

Al Clegg, of F. A. Clegg & Co., stated that this concern is busy, it having a lot of heating work locally, and several jobs pending furtherance of the work to a point where the company could start on heating and ventilating. It also has two garage jobs at Nicholasville; a residence at Paris and a residence at Danville.

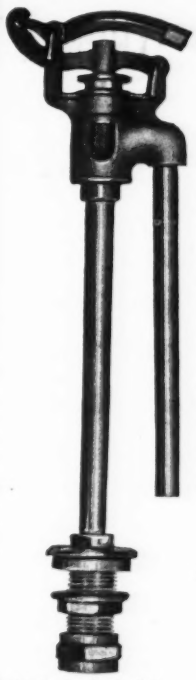
Brashear & Cahill contractors of Louisville, have a contract for a dormitory building at the Western Kentucky Normal School, Bowling Green, Ky., a girls school, the dormitory general contract costing $220,000. It will be of brick, 4 stories high, and modern in every respect. The plumbing and heating contracts have not yet been awarded.

Indiana

Indianapolis and Vicinity.

Building operations in Indianapolis during the month of May showed a practically normal condition with a slight increase over May of last year, according to a report from Walter B. Stern, city building commissioner. A total of 790 permits were issued during the month on property valuations of $1,403,237. In May, 1919, 800 permits were issued at a valuation of $1,156,091. During the last week of May, 1920, 220 permits were issued, at a total valuation of $618,420.

Indianapolis steamfitters, who have been on strike since April 1st, resumed work Monday, June 7th, as a result of an agreement reached Saturday, June 5th, between the local



"Burlington" Ball Cock

Closet tanks equipped with the "Burlington" Ball Cock cannot fail to give satisfactory service.

In construction, the "Burlington" is simplicity itself. Nothing to get out of order. Durable. Made of high grade metal by expert workmen.

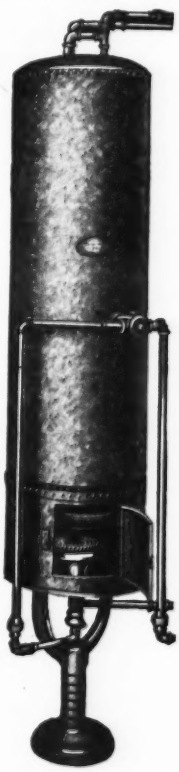
Elevated or submerged pattern.

Write for descriptive matter of "Burlington" Ball Cocks, Flush Valves and Tank Levers.

Patent Applied For

Burlington Brass Works

BURLINGTON, WIS.



THE ECONOMY AUTOMATIC COMBINATION BOILER

AND

GAS WATER HEATER

WITH POSITIVE THERMO-VALVE CONTROL

is a wonderful piece of equipment which renders on the storage principle absolutely the most complete and satisfactory instant and continuous hot water service with gas as the fuel. Every plumber will find it of great help to him in solving his customers' hot water problems.

See "Clow Bulletin" and "Sweet's Architectural Catalogue" if your jobber cannot tell you all about "Economy" Combination Gas Heater Boilers.

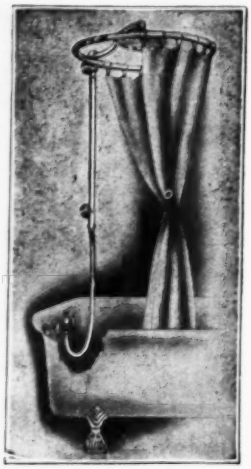
Economy Heater Company

108 South La Salle Street

CHICAGO

SANIBRASS

Portable Showers



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Master Plumber

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Jobber

SANIBRASS CORPORATION

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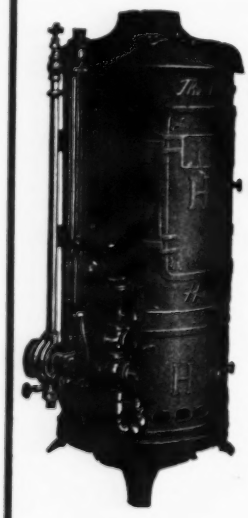
More Water Heater Sales

Means More Profits for You



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Instantaneous

Automatic Water Heater

on display in your show window. It has many special features that make for economy, satisfaction and durability.

If you want your water heater sales to grow, handle the HOFFMAN.

Write for Prices.

The Hoffman Heater Co.

Branch Offices in All Large Cities

Lorain, Ohio

union and the committee representing the Building Contractors' Association of Indianapolis. The settlement of the controversy with the steamfitters leaves idle only one of the sixteen locals belonging to the Marion County Building Trades Council and an agreement with this local, the Plumbers' Union, is expected shortly. The agreement under which the steamfitters go back to work is said to be similar to the one under which they worked last year.

The firm of W. H. Johnson & Son, 330 East St. Joseph Street, Indianapolis, has been awarded the contract for the installation of a heating system in the new addition to the Blue River township school at Moorland, Ind.

Fort Wayne.

Despite the fact that building activities at Fort Wayne have been practically at a standstill for several weeks due to a strike of common laborers, building records at the city hall show that construction work at a total cost of $356,461 was begun in the city during the month of May. This figure is a slight increase in building costs over the previous month and is nearly $100,000 greater than during the month of May, 1919. During the first five months of the present year buildings to cost $1,225,288 has been started in Fort Wayne. Of the 110 permits issued during the month of May, twenty-two were taken out for the erection of new residences. More than double this number were issued for the construction of garages. The largest and most expensive single piece of construction started during the month was the building of an apartment house on East Wayne Street, the cost of which is estimated at $80,000.

The contracts for the installation of the plumbing and heating systems in a new $20,000 garage that is to be erected at Jefferson and Hanna Streets, Fort Wayne, for Mrs. H. J. Hartman, were awarded to A. Haberstock, a plumbing and heating contractor at 525 Wagner Street.

Other Cities in the State.

Eighty-one building permits on property valuation of $335,470 were issued at Gary during the month of May, according to figures compiled in the office of the city building commissioner. Although more permits were issued during the month than were issued in April, they were for small structures and the building cost approximately $70,000 less than those for which permits were taken in April. The slump, according to members of the building trades, was probably due to increased wage scales demanded by workmen. The banner month at Gary so far this year was March, when 124 permits were issued which called for a construction expenditure of $629,395. During the first five months of the year there have been 315 building permits issued at Gary at a cost of $1,579,072. This is a much smaller showing than during the same period of last year, but is regarded as satisfactory in view of the high cost of material and labor, which has caused some of the leading builders of Gary to suspend operations.

That building costs this year are about double the amount they were last year is indicated by the report issued for the month of May by Edward Kerth, building inspector for Evansville. During the last month, 105 permits were issued at a total cost of $91,510. During the same month in 1919, 116 permits were issued at a cost of $45,075.

Fred Gross, a plumbing and heating contractor on South East Second Street, Washington, has been awarded the contract for the installation on the plumbing and heating systems in the new $60,000 school building that is to be erected soon at Alfordsville.

William Sibley, of South Bend, has been awarded the plumbing and heating contracts for the new addition to the Battell school, near South Bend. The price was $40,500.

The heating, plumbing and ventilating contract for the new extension to the Bruceville school building at Bruceville, has been awarded to the firm of Kixmiller & Son, of Bicknell, at $12,540.

P. J. Dolan, of Laporte, was the successful bidder on the plumbing contract on the new $100,000 school building that is to be erected at Laporte. The heating contract was awarded to the Liege Heating & Ventilating Co., Auburn, Ind.

W. Zimmerman, of 329 Olive Street, Whiting, has been awarded the contract for the installation of the plumbing in the new $50,000 church building that is to be erected at East Chicago, Ind., for the Holy Trinity church. The heating contract was let to J. H. Olson, of 4012 South State Street, Chicago.

Plumbing and heating contracts will be awarded soon on

the new bank and office building that is to be erected at Shelbyville for the First National Bank in that city. The building will be three stories high.

The Noble Plumbing Co., of Princeton, has received the contract for the installation of the plumbing system in the new office and residence that is to be erected at a cost of $35,000, for Dr. S. E. Saxe.

The firm of Chapman & Phelps, of Sturgis, Mich., was the successful bidder for the plumbing and heating contracts on a new school building that is to be erected at Howe.

California

San Francisco and Vicinity.

According to information furnished by the master plumbers' association of this city, no immediate report is expected from the special committees to which various matters were referred, at the recent state convention held in Oakland. The master plumbers expect good results from the conferences of their committees with University of California experts on matters relating to sanitation.

The city of San Francisco is advertising for bids for the plumbing work of the Jefferson School, to be erected on the south side of Irving Street, between Eighteenth and Nineteenth Avenues. Bids close June 16th. The work is to be paid out of the proceeds of the sale of school bonds of the issue of 1918, and the contract will not be made until the awardee shall have purchased, or caused to be purchased, bonds to the amount of the contract. Bids for the heating of the Jefferson School are being advertised for, under the same conditions.

The city has awarded to the Burnham Plumbing Co. the contract for the construction of a sanitary sewer and appurtenances in Canal Street from Mission Street eastward.

James A. Wetmore, acting supervising architect, is advertising for separate bids on materials and labor for the plumbing, heating, electric work, etc., for the construction of officers' quarters for the United States Marine Hospital, San Francisco. Proposals will be opened June 28th.

Plumbing, ventilating and heating contracts on the new theater, at Jones Street and Golden Gate, have been awarded. The building is Class A, the owners being the Famous Players, Lasky Corporation. The architect is Alfred H. Jacobs, 110 Sutter Street, San Francisco. The plumbing contract has been awarded to A. Lettich, 365 Fell Street, total cost $18,230. The Scott Co., 243 Minna Street, has the ventilating and heating contract, the work including steam piping, galvanized iron ducts above basement as well as in basement, fans and electric motors, etc., the total cost being $30,000.

The Knittle Cashel Co., 1820 Ellis Street, has the contract for installing a steam heating plant in the hotel at 172 Columbus Avenue, owned by Henry G. Meyer, Mills Building, San Francisco. The contract amounts to $7,400.

Other Cities in the State.

All bids received by the Lodi Grammar School District have been rejected as being too high. The Scott Co., of Oakland, submitted the lowest bid on the heating. Ninety thousand dollars is available for the site and structure.

S. Hill & Son, of Santa Ana, have obtained the contract, at $7,995 for installing plumbing and heating in the reinforced concrete auditorium at Santa Ana High School.

The plumbing in the new school building, at Redlands, will be installed by the Thomas Haverty Co., Los Angeles, for $7,450 and J. Hokom, also of Los Angeles, has the contract for steam heating at $6,976.

The Board of Education of Fresno has awarded contracts for the construction of the Edison and Jefferson Schools, as follows: Plumbing, Barrett-Hicks Co., 1035 I Street, Fresno, $1,284 and $9,189, respectively; heating, Mechanical Engineering & Supply Co., $7,350 and $5,850, respectively.

NEWS FROM LOUISIANA.

Capitol City Plumbing Co., 218 Laurel Street, Baton Rouge, will install the plumbing and heating in the Columbia Theater, and in five residences in Fairfield and five in Garden City. The plumbing and heating contract on the new Istrouma school building has also been secured by that concern.

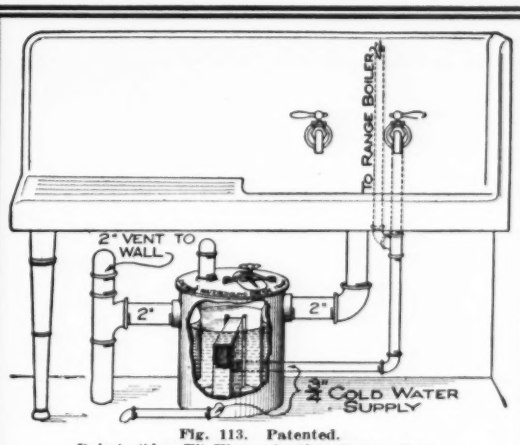

Fig. 113. Patented.
Dehn's "AcmE" Water Cooling Grease Trap.
A satisfactory installation.

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THE QUALITY GOODS

Compound Injector & Specialty Co.

Originators, Designers and Sole Manufacturers of

"DEHNSANIGARD"

419-421-D-N. Laramie Ave., Chicago, Ill., U.S.A.

Drilling UP Holes

Concrete Ceilings Through Floors

Any size up to 2½ inches

Round smooth holes, for Expansion Bolts, Through Bolts, Pipes, Risers, Returns, etc.

PHILLIPS

Spring Hammer Drill

Typical way of drilling UP holes in concrete ceilings and through floors.

Some Fire Sprinkler Systems now being installed and the approximate number of holes required. Size of holes ranging from ¾ to 1½ inch diameter. Phillips Spring Hammer Drills used exclusively.

Missouri Valley Sack Co., St. Joseph, Mo.....2000 holes
Northern Bag Co., Minneapolis, Minn.....3500 holes
Haines Automobile Co., Kokomo, Ind.....2500 holes

Write for more information

Daugherty-Smith-Phillips Co.

1325 W. North Ave., Chicago, Illinois

A Size For Every Need

Patented Aug. 12, 1919

Order from your jobber.
Write for Booklet.

With a "SMALL," "MEDIUM" and "LARGE" size Bozeman Tank Bulb, you are equipped to handle any tank job.

Because of the V, or wedge-shaped seat, each size fits three sizes of flush valves. This saves carrying nine sizes of other makes. Cuts down your tank bulb investment one-third.

Bozeman
Natural Seat Tank Bulbs

stay on the job. Will not swell or elongate. No time wasted on return trips or repairs.

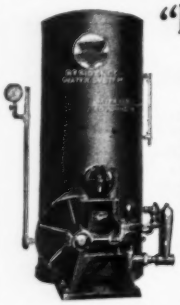
Bozeman Manufacturing Co.
312-14 West Redwood Street,
BALTIMORE, MD.

"Sirocco"
TRADE MARK.

Let Sirocco Engineering service solve your ventilating, heating and cooling problems. Send for catalog.

AMERICAN BLOWER COMPANY
DETROIT MICHIGAN U.S.A.

"DURO" Water Systems



A clean-cut selling proposition for dealer or merchant plumber.

The "DURO" is a high grade, standard product that appeals to the buying intelligence of the home-owner, and, in addition we furnish sales and advertising plans, follow up letters, electros, etc., for the use of our dealers.

Write or wire for full details.

Distributors in all principal cities

GUARANTEED DURO MADE BY THE BURNETT-LARSH MANUFACTURING CO. DAYTON OHIO

The Burnett-Larsh Manufacturing Co.
DAYTON :: :: :: OHIO

SNOW FLEXIBLE GASKETS

make

WATER CLOSET JOINTS

that:—

Do not leak sewer gas,
Do not leak water,
Are durable.

For any bowl.....Sold thru the jobbers

SNOW FLEXIBLE GASKET CO.
Chicago, Illinois

I. E. Lewis, Florida and Eighth Streets, Baton Rouge, has the contract for the installation of plumbing in thirty residences that are to be erected in Baton Rouge and vicinity.

The American Plumbing & Heating Co., New Orleans, has been awarded the contract to install the plumbing and heating systems in the Times-Picayune newspaper building, the Commercial Bank building and the Chess, Checker and Whist Club building.

THE PROVINCE OF QUEBEC.

Montreal and Vicinity.

A marked increase is noticeable in the building permits issued for the city. For the first five months of the year, permits have been issued for building to the extent of $6,085,034, while the total construction work for the city for 1920 is estimated at $12,000,000, or $2,000,000 more than last year. Of the total permits issued, more than $4,000,000 worth were issued during the past two months. Very little of this has been put in hand yet, but it is anticipated that a good deal of it will be started before long, and its influence should soon be felt in the plumbing and heating trades.

A large part of the plumbers' time is being taken up in an effort to remedy the defects in the Montreal Light, Heat & Power Co.'s gas system. It is said that gas mixed with sulphur has caused great distress throughout the city, and the plumber, who has been called on innumerable times to remedy the supposed defects in piping, is powerless to act, at least until the 400 miles of piping has been emptied of their contents.

A meeting will probably be held shortly to discuss the question of the new taxes which plumbers, generally, are not inclined to pay.

PROVINCE OF ONTARIO.

Ottawa.

No contracts of any size have been awarded to local plumbing firms lately, though quite a few are reported to be pending, among them the work for the new $2,000,000 civic hospital and also for the new Maternity Hospital. The delay is largely due to the recent strike in the building trades.

Several local plumbing firms report that business is fair, with contract work lagging and repair business their mainstay.

Livock & McColl report many calls for tenders but few contracts awarded, owing to the high prices of material and labor.

Jobbing work and replacements were keeping the firm of Coldrey & Chapman busy, but prospects at present did not promise many new contracts.

Hamilton.

Building permits for the month of May totalled 151, of an aggregate value of $521,250, an increase of 30 permits and a value of $202,940 over the corresponding month of last year.

As showing the healthy state of the plumbing trade the plumbing permits issued from the office of the plumbing inspector, for the same month, amounted to 95, covering some of the following contracts:

Adam Clark, Ltd., plumbing and heating of the Allenby School, Postal Station B, and the Wood, Alexander & James warehouse, King William Street.

Bloom & Brittain, plumbing and heating of the offices and stores for Mills Bros., Hughson and Main Streets.

James Saynor, eight dwellings in the eastern portion of the city, also the contracts for six new dwellings at present in course of erection, by T. Atkinson, on Maple Avenue.

W. Backalake, three dwellings on Bradford Street, and two on Manchester Street, for Mr. McMann.

As a whole, the trade was never so good as at the present time. A query often met with just now is: "You don't know of any plumbers or steamfitters looking for a job, do you?" And the only answer that can be given is, "I don't."

WHERE YOU CANNOT TURN HOT WATER INTO THE TUBS.

Monday morning is well established as an American domestic institution. It means suds (floating in the tops of white enameled laundry tubs) in the kitchens or basements of American homes, and housewife or maid (according to the thickness of the family purse, and the available supply of labor) standing over the washing machine or board, cleansing the family linen.

In many homes of this country, today, Monday morning has lost its terrors. The electric washing machine and wringer, with all labor reduced to the mere switching of an electric button, has been introduced into a majority of American homes. The electric iron, too, has done its part to simplify the problem of domestic laundering.

Let the American woman, who is accustomed to all the conveniences of modern plumbing and electrical invention, pause for a moment and contrast the ease with which she performs her house-work, with the difficulties experienced by the housewives in many parts of Europe. Over there, there is no kitchen sink, with hot and cold water faucets; no white bath-tub, ready for the old-time "Saturday night," which now has become a daily habit for young and old;

The Only Laundry These European Peasant Women Have Ever Seen is the country stream where they beat their clothes on the rocks, until they think they are clean. The white enameled laundry tub, universal in America, would be a revelation to their eyes. The Red Cross distributed many tubs and cans, which enabled these women to do their washing in their own dooryard, and simplified the hard task of the domestic laundry.

no shower-bath, with its power for instant bodily refreshment, and no smooth laundry tubs, installed in basement of the country home or in the kitchen of the city apartment.

Instead, all family laundry is done at the nearest stream. A spot is selected nearest the town, and a community washboard is a rock. Each woman has her time for washing, and here the clothes of the village are beaten and scrubbed until clean. This process is equally hard on clothing and on the back and arms of those who must do the work. In the winter, these women go out and break the ice, and wash their clothes in the water of freezing temperature. Many cases of frozen fingers were treated by the Red Cross doctors and nurses, especially in the Balkan States, among the country women who had to do their work under these difficult and exhausting conditions.

What wouldn't those women have given to have access to a modern home laundry—like those which American women take for granted!

The American Red Cross has been able to simplify, to some extent, the hard work of washing clothes in Europe.

One of
THE "REASONS WHY"
You should handle
DETROIT WATER HEATERS
ECONOMY OF OPERATION

The much greater surfaces of metal, backed by a film of water, exposed to the burning gases, in our heater means that the desired result can be obtained by the burning of 25 to 35 percent less gas.

Detroit Heater Corporation
715-17-19 Grand River Ave. - Detroit, Mich.

The Hotstream WATER HEATER

KEROSENE WATER HEATER

WICKLESS BURNER generates its own gas and throws a clean, powerful flame.

Easy to operate and guaranteed for satisfactory service.

Once sold—stays sold—no comebacks.

THE HOTSTREAM HEATER CO.
CLEVELAND
"Makers of Heaters that Heat"

(We also make a complete line of single and double copper coil, and cast iron coil gas water heaters.)

FEMCO

Plumbers' Brass Goods

The Recognized Standard

Traps Supply Pipes
Closet Tank and Seat Trimmings
Connected Waste and Overflows

Write for Catalog and Prices

Frost Manufacturing Co., Kenosha, Wis.

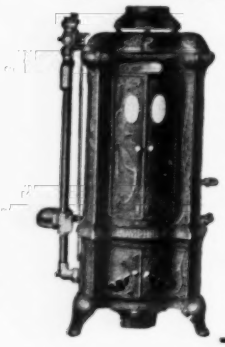
The Smokabate Steel Swinging Arch

Smokabate guarantees to comply with any smoke ordinance in the U. S. A.
Money invested in the SMOKABATE means 15 to 35 per cent saving in fuel consumption.
Our method of firing is but once every five to seven hours.
Keep your customers satisfied by giving them an even temperature of heat.
A system which shows more efficiency with Illinois and Indiana coal than another plant burning Pocahontas.
Burns 90 per cent of the 40 per cent volatile matter in Illinois and Indiana coal.
Actually eliminates soot.
Think these facts over. It means dollars to you.
Every user more than satisfied.
Call, Phone or Write for more information.
Oh Yes, it pays for itself in less than a firing season.

RECOMMEND THIS PROFIT MAKER

SMOKABATE SERVICE CO.
3844 Sheffield Ave. CHICAGO, ILL.

A Household Word



The name "Humphrey" in connection with Automatic Gas Water Heaters is known the country over. The dealer and plumber who sell it get the advantage of this prestige which results in easy sales and satisfactory service.

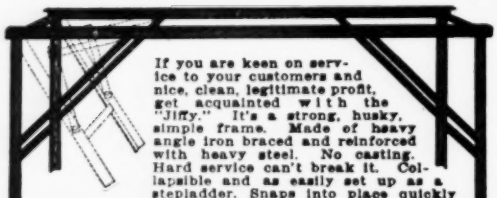
Try the Humphrey on your next water heater job.

Write for full description

HUMPHREY COMPANY
Div. Rund Mfg. Co.
Kalamazoo, Michigan

"JIFFY"

Collapsible Laundry Tray Frame



If you are keen on service to your customers and nice, clean, legitimate profit, get acquainted with the "Jiffy." It's a strong, husky, simple frame. Made of heavy angle iron braced and reinforced with heavy steel. No casting. Hard service can't break it. Collapsible and as easily set up as a stepladder. Snaps into place quickly and firmly. No tools required. It will save you time—please your customer and mean more profit for you. Ask your jobber.

THE FORD DONLEY CO., 1940 East 117th St., Cleveland, Ohio

EXCELSO WATER HEATER

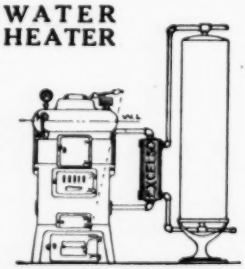
Heats domestic water just right at minimum cost.

A simple, one-piece casting connected below water line on outside of steam and vapor boilers. Does away with fire-pot coils.

Three sizes, for 40, 70 and 100 gals. capacities.

An easy seller and big profit maker.

Write for details.



Showing Heater Connected to a Vertical Type Boiler

EXCELSO SPECIALTY WORKS
601 WHITE BUILDING BUFFALO, NEW YORK

Simplify Your Heating Jobs

Whenever you install the "O-E" Perfect Heating System (Three in One) your customer not only gets more for his money, but the simplest, most flexible system made.

The "O-E" Perfect Air Exhauster and Vacuum Valve remains open as long as there is any air in the system, but port closes the minute any heat comes in contact with it. Always works. Cannot stick or buckle. Fool-proof.

Write for Booklet "A."

O-E SPECIALTY MANUFACTURING CO.
884 Third Street, Milwaukee, Wis., U. S. A.

It has given hundreds of tubs and large cans to these peasant women, enabling them to do part of their washing in their own door yard. However, the streams and community tanks are still popular. Perhaps this is due to the natural clinging to the traditions and domestic habits of their grandmothers. However, foreign relief workers believe that if the country women of Europe can be induced to give American labor-saving and sanitary plumbing devices a fair trial, they will take them as rapidly and devotedly as have the women of America.

Brick House Building Costs Nearly Tripled.

Detailed costs, according to the Federal Reserve Banks' June report, of building an average six-room, two-story brick house in a row of similar houses, are given below with a comparison of costs in September, 1918, and May, 1920:

	Sept. 1918	May, 1920
Permit	.....	$5.50
Survey	.....	4.00
Excavating	$76.50	105.20
Masonry	266.00	588.00
Cut Stone	5.20	10.00
Brickwork	416.00	875.00
Structural iron	30.06	90.00
Ornamental iron	32.60	96.00
Lumber	194.18	582.54
Millwork	225.00	625.00
Stairs	40.00	90.00
Carpenter	190.00	454.00
Nails	12.00	24.50
Hardware	27.53	90.00
Painting	145.00	240.00
Plumbing	377.00	740.00
Heating	89.75	189.75
Electric Work	41.00	108.00
Lighting fixtures	30.00	75.00
Papering	30.00	60.00
Roofing and galvanized iron	100.00	182.00
Plastering	144.50	505.75
Cement work	173.00	432.50
Range	31.75	60.00
Sodding	30.00	75.00
Incidentals	135.00	100.00
Totals	$2,842.07	$6,407.74

LATE NEWS FROM MICHIGAN.

Detroit and Vicinity.

Building permits experienced a noticeable falling off during the past two weeks, and structures in course of erection are still suffering on account of the continued strike of plumbers. About 700 of the union men are still out. Many have drifted into other work, while approximately 300 men have come to Detroit, Pontiac and Flint, from all sections of the country.

On account of the labor trouble, master plumbers and contractors are nearly at a standstill in the matter of letting both plumbing and heating contracts, preferring to wait until the matter is definitely settled before binding themselves with contracts which they probably would be unable to complete.

F. M. Smith, of Clinton, Mo., has secured the contract for the installation of plumbing and heating systems in E. D. Sayles' residence, and he will also install the heating in W. F. Crome's residence in that city.

Arthur R. Marsh, editor of "Economic World," in "New York Sunday World," says conditions of our crops warrant fear that we may have serious shortage of food this year. Private estimates indicate acreage of spring wheat 25 per cent less than a year ago. Corn acreage probably will be considerably reduced. Number of farm workers has decreased 28 per cent in two years.

SHORTAGE OF COMMON LABOR.

Secretary Frank S. Hanley, of the Eastern Supply Association, in General Bulletin No. 77, to members of the association, reproduces a letter written by Robert K. Story, 150 Nassau Street, New York, to the Hon. William M. Calder, United States Senator from New York, in regard to a matter of national concern, that is, the shortage of common labor. Members are asked to communicate quickly with their representatives in Washington if they agree with the objects of the letter, which reads as follows:

Hon. William M. Calder, Senater Chamber, Washington, D. C.

My Dear Senator:—I have called on you several times in the past bearing on subjects of both personal and public matters of mutual and general interest, and which you have always given more than ordinary consideration.

Knowing that your personal interests lie largely in the building line, and I, in turn, being interested with manufacturers supplying materials incidental to same, I am calling your attention to some conditions with which we are both thoroughly familiar, feeling that with this knowledge you can give same more than intelligent attention and application. To wit:

There seems to be a vast difference of opinion on the part of our law makers at the present time as to the advisability of allowing immigration into this country, and in the majority of cases those who have considered the subject apparently are not as familiar with both our commercial and agrarian requirements as they apparently should be. Our laws as framed at the present time being outlined to only admit the higher and more intelligent class of immigration, and which, apparently, is tending to bring in an element apparently qualified, and who, in many instances, are the agents of propaganda that are doing everything in their power to disturb the general working conditions and create in every direction discord and discontent, and with the result of general suffering. Whereas, on the other hand, the manufacturing interests of the country in practically all lines, as well as the agrarian and farming interests, are seriously handicapped in their productive capacities in various ways by the shortage of practically ignorant, common labor. But, unfortunately, this class seems to be debarred, and it is for the want of same that we one and all are suffering.

I quote from a letter just received from the general manager of one of the plants with whom I am identified, as follows:

"We can secure mechanical engineers, metallurgists, draftsmen, pattern makers, machinists, and the high-class workmen with very little difficulty, but we have arrived at a point now where the common labor is demanding for their services almost as much as a first-class mechanic can be employed for, and all of which makes such terrible inroads on our cost to manufacture, and that the situation is one that we believe should be put to our representatives for their guidance and information.

"It so happens that our American boys, or so-called 100 per cent American, will not do the rough work, such as mining, working in the steel mills, packing houses, digging sewers, building subways, repairing railroads, and doing the general heavy work, so it means that we have got to have immigration or be content to work shorthanded, and incidentally at a decided increase in cost to manufacture.

"We have not been able to increase our production for the past year, due to the labor shortage, and it seems to be getting worse all the time. I am of the opinion that we have all overlooked the fact that the country has taken on new industries since the war, which has made in-

One of the 105 Styles of American Cast N. P. Lavatory Traps

The artistic design and smooth finish of AMERICAN Traps will appeal instantly to your customers.

Made perfectly smooth inside and out—deep water seal, full sized waterway.

You can depend upon the AMERICAN Line.

Write for catalog.

Fig. 301

AMERICAN SANITARY MANUFACTURING CO.
Abingdon, Illinois
Manufacturers of Fine N. P. Brass Specialties

TURNER TRADE HOT BLAST MARK TORCH

For Gasoline

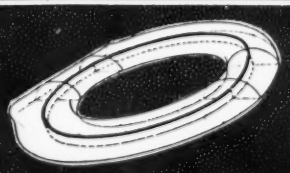
has some new and interesting features.

Open type burner with which it is equipped, generates greater heat than the ordinary type. Superheats and properly mixes the air before it enters combustion chamber of burner, and is immune from wind and cold air currents.

Ask your jobber for the Turner

No. 202
List $16

The Turner Brass Works
Dept. D
Sycamore, Illinois



ALLRIGHT STEELBOUND Closet Seat

THE steel backbone in ALLRIGHT Seats, together with expert finish, and real service, is the secret of their popularity.

The difference in cost is nominal. Considering results they cost less. They spell satisfaction as well as profits.

Ask for catalog.

Allright Mfg. Co.
Rural Hall, N. C.

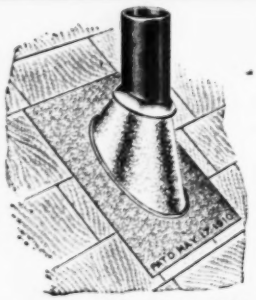
"Mon-Seal"

"THE CLEANER CLOSET"
Patent Pending

Made of "Castex" Whitest Vitrified China. A closet of the washdown type but infinitely better.

See your nearest jobber

CHICAGO POTTERY CO.
1924-40 Clybourn Ave., Chicago



Don't Be Content
With Ordinary Roof Flashings

Specify and Use the Reliable
"SIMPLEX"
Made in
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roads on labor for which there has been no apparent provision made.

"Our product is used in the construction of building, and while we are getting a very good price for our product, we believe that the cost is now as high as it should be, and the very high cost of all building materials is, in the very near future, going to retard the building operations to such an extent that it might be disastrous to us all before long.

"As an example: As to the comparison of wages paid now as against the pre-war conditions, we will say that our moulders make from $8 to $15 a day, and before the war their wages were from $3 to $5. Our laborers make between $5 and $8 a day, whereas before the war they made about $2 a day.

"We are operating about 60 per cent of our usual tonnage, and cannot increase production on account of the shortage of labor, and with the growing uncertainty of the increased cost of pig iron, coke and other materials necessary for the manufacture of our product, to say nothing of the uncertainty of the labor situation, it makes it difficult and impossible for us to take on business for future delivery which is highly essential in building operations."

These conditions as outlined not only apply to one individual line of business, but to practically every other line of manufacture of building materials, and from inquiry are on a comparative plane with those as existing in the oil, paint, woolen and cotton mills, clothing, boots and shoes; in fact, every line of manufacture throughout the land. The same conditions apply to the farming and kindred interests throughout the country.

The basic trouble undoubtedly lies in the fact that our labor element generally as it exists today is of a higher order of intelligence than ever before, and with the enormous increase in wages that is being paid artisans generally, the available men, with very few exceptions, are looking for and demanding work on a higher plane commanding these higher wages, and with the result that there is a dearth of uneducated man power labor for doing t' hard work for which they are qualified. And those that are available realize the conditions and assume that arrogant position where they will not submit to either dictation or order such as is necessary to warrant successful operation.

The late Collis P. Huntington once made the remark that "too much education would eventually be the ruination of this country," and it certainly looks as if we had arrived at that stage and period.

What this country absolutely needs today is at least 5,000,000 more able-bodied men of the common laboring class to provide the necessary man power for common labor for the mills, factories, farms, etc., in order to keep pace with the increased demands of the country at large, and there certainly should be a modification made in the immigration laws to admit of the entering into the country of this element under proper surveillance, and if the flood gates were only opened in this respect, there are no doubt hundreds of thousand of such men on the other side of the water who would be only too glad of the opportunity to embrace same.

I certainly feel that if these conditions were thoroughly exploited, among not only your associates, but your Representatives in Congress as well, it would be the means of overcoming a very large percentage of the many troubles with which the country at large is contending.

I feel that prompt action on your part in exploiting this matter along the proper lines would be the means of exalting you to a still higher pinnacle than that which you have already enjoyed in your political career, and to this end commend the matter to your kind consideration for the welfare and benefit of our country at large. With kind regards, Yours very truly, Robert K. Story.

COMPARATIVE EFFICIENCY OF VENTED HALF-S TRAPS AND NON-VENTED, ANTI-SIPHON, NON-SIPHONING OR RE-SEALING TRAPS.

(Continued from Page 486.)

"Such traps as are needed, may be placed so close to the outlets which they guard that the length of intervening pipe shall be too little for the decomposition of its sliming to be noticeable. Every waste pipe may be ventilated through its whole length from the soil pipe to the trap, that is by carrying an air pipe from the side of the house into the trap pipe a little above the water seal, and another pipe leading from the top of the receiver up alongside of the soil pipe out at the roof. This will secure a circulation of air at a point where it is very much needed and will much lessen the danger which we have to apprehend from kitchen sink and water closet traps as at present arranged."

It is interesting to note that in the same year Colonel Waring obtained a patent on a modified ½-S trap with enlarged outlet body containing a float designed to prevent entrance of sewer air, very similar in construction to designs patented about 5 years earlier.

In 1873 Patrick W. Doherty patented a "Stench trap" very similar to that used by the U. S. Housing Corporation during the recent war and now manufactured by the Sanitary Company of America under the name of the "Saaco Anti-Siphon Trap."

In 1875 Ludwig Brandeis, of Brooklyn, developed and obtained a patent on enlarging the body, but retaining the shape of the S trap.

Many additional patents were issued under the names of: "Stench, Fluid, Plumbers', Sewer Gas, Waste Pipe," traps since 1874, among which the following few may call for special mention:

Chas. W. Garland, San Francisco, Cal., 1874 and 1876.
B. P. Bowers, Cleveland, Ohio, 1877.
George E. Waring Jr., New York City, 1878.
Ludwig Brandeis, Brooklyn, Paragon Trap, 1878.
Frank E. Cudell, 1878, 1886, 1896, 1912.
Joseph Bennor, Philadelphia, Pa., 1880, (First Mercury Seal Trap).
Frederick N. DuBois, New York, 1882.
J. Pickering Putnam, Boston, Mass., 1884 (2 patents), 1887, 1897 and 1905.
Samuel S. Hellyer, London, England, 1884.
Hiram T. Bush, Detroit, Mich., Assignor to Ideal Mfg. Co., 1893.
Leonard D. Hosford, Brooklyn, 1897.
Albert S. Newton, Providence, R. I., 1898, 1907.
George Cody, New York, Assignor to Louis Munziger, New York, 1904.

This trap is not the one now known as the "Geco" trap, but consisted of an S trap with enlarged cylindrical outlet leg, containing a baffle in front of the outlet pipe. The patentee claimed this trap to be "Non-siphonable and self-scouring."

Henry J. Luff, Cleveland, Ohio, 1908.
George Cody, N. Y., March 24, 1910.

This trap is now sold under the name of "Geco." It is described in the patent application as an "automatic anti-siphon self-scouring trap, having an inlet at the bottom and a horizontally extending outflow connection from the top, the outer wall of the trap being extended inwardly at its junction with the outflow connection, and inclined continuously downward from said junction so as to form a combined cut-off lip and return watershed, when the trap is siphoning."

Since 1910 there have been issued about 5 patents on anti-siphon traps each year to various applicants, which are, however, less important than those mentioned above, for the purposes of this investigation.

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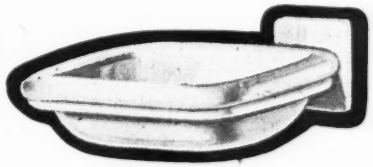

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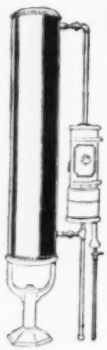

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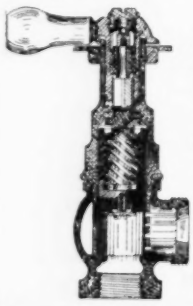

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In 1879, on August 26th, a patent was issued to John McCloskey, under No. 218,891, on improvements to sewer pipe connections, which covered the system of back venting. McCloskey, being apparently of an aggressive disposition, took steps immediately to collect the royalty from D. P. Barhydt, for using back vents in his residence at 23 East Forty-first Street, New York, and suggested through his attorney, Frank J. Dupignac of the Equitable Building, 120 Broadway, that he should settle for the sum of $50 per line of pipe used. Mr. Barhydt, undaunted, referred the matter to the "Sanitary Engineer," now the "Engineering News-Record," who had their patent attorney, J. N. McIntire, investigate the patent. Mr. McIntire reported that in his opinion no one could be enjoined under the patent from the use of a venting system as then commonly employed, and that the patent was perfectly invalid.

Another suit was brought by McCloskey against a householder on Fifty-fourth Street, James H. Young, for the use of his "patented venting system." It seems that the patentee had been employed as a journeyman plumber by Henry McGuckin, master plumber of 951 Sixth Avenue, in the installation of the work during the summer of 1879, just prior to the issuance of his patent. Mr. Young refused to pay, and suit was brought in the U. S. Circuit court, Southern District of New York; Betts, Atterbury, and Betts were the defendant's attorneys and they retained Edward S. Philbrick C. E. of Boston, Mass., as expert.

Mr. Philbrick proved that he had used the venting system in 1875 in Brookline, Mass., and again in 1876 in the home of Dwight Foster, No. 18 Chestnut Street, Boston, Mass. Mr. Philbrick testified that he had been unable to find in the patent any point or combination which he had not previously practiced.

The plaintiff finally withdrew the suit and paid the costs of the court.

It appears from the available literature that in about 1880 the question was first raised seriously, whether anti-siphon traps could safely supplant vented traps of the ½-S or S pattern.

During this year Geo. E. Waring applied to the then existing National Board of Health for an appropriation for experimenting on trap siphonage. This was granted, and the work was carried on with some degree of thoroughness between June 6 and December 22, 1881, as stated by Colonel Waring.

Colonel Waring goes on to say:

"Subsequently I reported my results to the National Board of Health, and the report was put in type for publication in the "Bulletin." The publication was postponed for a time because the results shown and the deductions drawn were not in accordance with the theories on which the prescriptions of several Boards of Health had been based."

In these experiments Wm. Paul Gerhard assisted Colonel Waring.

The experiments, as described by Colonel Waring, "in the interest of chronological exactness" in the "Sanitary Engineer" of November 2, 1882, and stated by him to have been under the immediate supervision of his assistant, William Paul Gerhard, C. E., were made in two different series.

In series No. 1, the traps selected for test were attached with a "putty" joint to the end of an 1¼-inch lead waste pipe connected into a 4x2 Y of the 4-inch cast iron soil pipe stack. The waste pipe was provided with 3 vent branches located at intermediate distances between the trap and the stack; the vent branches could be opened or closed at will. The soil stack was about 15½ ft. high and extended at its foot by a bend and a 4-inch horizontal or inclined line. About 9 ft. above the 4x2 Y branch was placed a bath tub with a 2-inch outlet and 1¼-inch lead waste pipe, discharging 80 gallons from the tub in about 80 seconds through a 4x2 Y into the 4-inch stack at some distance,

which is not shown, but probably about 7 to 8 ft., above the lower 4x2 Y. Still further up the stack, possibly a foot or so, although this is not stated in the records, a 4x4 Y was inserted, which received 2½ gallons discharges from a funnel through a "Pan Water Closet" with a 4-inch lead trap having about 1-inch seal. The rate of discharge is not given. The top of the soil pipe was provided with a flap valve used to close the stack wholly or partially. Also a 4-inch tinned iron pipe about 54 ft. long with four bends was inserted at times into the top of the open 4-inch soil stack to provide additional length of stack.

Five types of traps, namely the ordinary 1¼-inch S trap with seals varying from 3 inches to 5 inches, and made of glass; the Bowers trap having a ball floated against the inlet end; the Garland trap having a ball resting on the inlet by gravity; the Brandeis "Paragon" trap having an enlarged rectangular body; and the Nicholson mercury seal trap, were intended to be tested. The Cudell trap, another gravity ball trap, "arrived too late for trial," but "it seemed to be the same as the Garland trap."

With the soil stack and vent branches closed, all the traps were completely siphoned, when only the bathtub full of water was discharged.

With the soil stack closed, and one vent open, the maximum loss of seal of the S trap was 1-inch. The other traps were not experimented with.

With the valve on top of the soil pipe ⅛-inch open all around, the S trap lost 1½-inch water seal, when the bath and water closet were discharged simultaneously. Under the same conditions the two ball valve traps lost no water; the others were not tested.

With the soil pipe open at the top and one of the vents open, the S trap and the two ball valve traps lost no water seal; the other traps were not tested.

With the soil pipe lengthened 54 feet, open at the end, and no vent, water closet and bathtub discharging simultaneously, the S trap lost ½-inch seal, the Paragon trap ¼-inch; other traps were not tested.

Under the same condition, with the vent open, no loss of seal occurred in any trap; all traps were tested.

The Second Series of tests were made to determine, if the flow of one fixture, such as a bathtub, would siphon the trap of another fixture, such as a basin, connected to the same waste pipe. In these tests an 1½-inch lead waste pipe with a bathtub at its upper end was connected into the 4x2 Y used in the previous series for the connection of the traps under test. The 1½-inch bath waste received an 1¼-inch branch to which the various traps were connected for test, while the bathtub was being discharged. It was found that, whether the 4-inch soil stack was open or closed at the top, made no difference; the unvented S and Paragon traps were siphoned while the ball valve traps retained a sufficient water seal. The mercury seal trap was not tested.

All of the experiments were made with the 2-inch funnel shaped bath outlet, which was then changed to 1½-inch and produced the same results.

In his deductions, Colonel Waring states that the opening of the 4-inch soil pipe at the top practically prevents suction in the soilpipe, even when the upper part of the pipe is 70 feet in length; that the siphoning of even unvented ½-S traps having more than 1-inch of seal need not be apprehended, if each fixture wastes by an independent outlet to a branch of a 4-inch soil pipe open at the top; that, if one fixture waste is connected as a branch to another fixture waste pipe, discharging into a soil stack, the discharge of the latter fixture may nearly or quite break the seal of an S trap on the former, unless of unusual depth; that under such conditions the seal of traps with balls, tested by him was not broken; that under the same conditions the trap with an enlarged body tested by him was not superior to the ordinary S trap.

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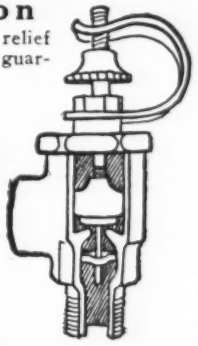

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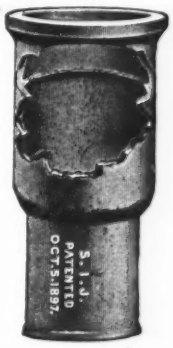

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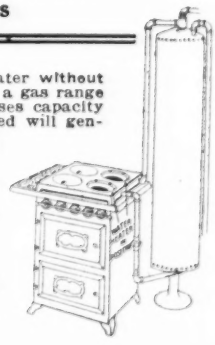

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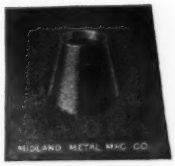

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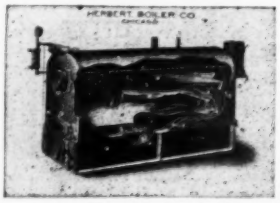

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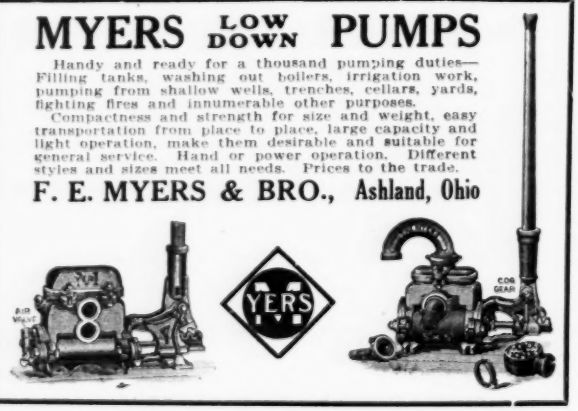


He drew the general conclusion that the separate ventilation of traps, where the main soil pipe is 4-inches in diameter and open at the top, is unnecessary, especially "as it is always simpler and much less expensive to carry each waste independently to a branch of the soilpipe."

However much Colonel Waring may have been searching for the truth, it is impossible to grant that he found it, as will be readily seen in the light of present day knowledge. No plumbing code of any city, however slack, would today approve of a system of plumbing with a 4-inch soil stack open at the top extending 70 ft. above the highest fixture, and receiving by individual branch wastes the discharges from unvented fixture traps of the ½-S or S pattern. They would insist on either vented traps of the S or ½-S pattern or on the installation of such anti-siphon traps as they might consider proper. Even those, who advocate the use of anti-siphon traps in place of vented traps of the S pattern would concede that unvented S or ½-S traps would be unsafe under such conditions.

The Colonel's suggestion that each fixture be connected by a separate waste pipe into the soil pipe stack, is impracticable for reasons of building construction.

It is fair to conclude from the deductions made by Colonel Waring that, where it is impossible to provide individual waste pipes to the soil stack from each fixture, and where it becomes necessary therefor to use the same branch waste pipe for two or more fixtures, the only alternative is the use of traps with a floating or gravity ball or similar device. Nearly all standard plumbing codes and all reputable sanitary engineers will prohibit in the light of present knowledge the use of traps with balls or similar mechanical devices. Hence I am satisfied that experience has proven Colonel Waring's conclusions to be erroneous in two particulars, to say the least.

I do not believe that Colonel Waring drew intentionally any conclusions favoring ball traps, but it is the fact that he was the patentee of a trap containing a mechanical device of a similar type.

A comparison made between the siphonage resisting qualities of the vented S trap and the unvented anti-siphon traps in the Waring tests shows that the former could not be siphoned even with the soil stack completely closed at the roof, while the latter, even those with the ball valves, failed completely under the same conditions.

In 1882, S. S. Hellyer, of London, England, conducted an interesting series of trap siphonage experiments, which are described in the "Sanitary Engineer" issue August 17, 1882, Vol. VI. These tests were made with 1½-inch, 2-inch, 3-inch, and 3½-inch stacks, slop sinks, baths, lavatories, and water closets, and with ½-S, Bowers, Anti-D, Anti-D Narrow Band, Helmet, and Eclipse traps. The experiments were very comprehensive and made with fixtures on three floors, the total height of stacks varying between 37 and 70 feet. The vent pipes were controlled by valves. Mr. Hellyer, whose experiments are referred to by Dr. William Paul Gerhard in his "Sanitary Engineering of Buildings" as careful and valuable, concludes that, "where tiers of traps of any description are fixed upon one main pipe, for receiving discharges from water closets, slop sinks, baths, quick waste lavatories, etc., each individual trap or branch must be ventilated, if the traps upon the piping are to maintain their seals intact." It is obvious that the conclusions drawn by Mr. Hellyer are diametrically opposed to those drawn by Colonel Waring, and it is interesting to note that Dr. Gerhard, who conducted the Waring tests, considers the Hellyer tests as "careful and valuable."

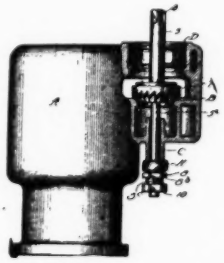
Attention is called to the fact that Mr. Hellyer held an English patent on the Anti-D trap since March 25, 1880, and the American patent on the same trap was issued to him on October 10, 1884, two years after his tests referred to above.

(To be Continued.)

Patents

Heating Department.

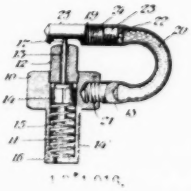
1,340,359. Valve-Seat Reamer. Frans O. Albertson, Sioux City, Iowa, assignor to Albertson & Company, Sioux City, Iowa, a Corporation of Iowa. A valve seat reaming tool of the class described comprising a shank carrying a reaming cutter intermediate its ends, that portion of the shank below the cutter being adapted to be inserted in the valve stem guide associated with a valve seat to be reamed, and devices on said shank below said cutter arranged to co-operate with the valve stem guide to cause the cutter edges to bite into the seat, said devices comprising a sleeve disposed around said shank said sleeve providing with a cylindrical screw-threaded upper portion and an externally threaded and slit conical lower portion, a clamping nut co-operating with said conical lower portion arranged to retain said sleeve at any one of a plurality of positions on said shank, and a cap threaded upon the upper portion of said sleeve arranged to bear against the lower portion of the valve stem guide for the purpose set forth.

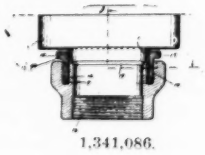


1,340,359.

1,340,270.

1,340,270. Safety Electric Welding-Torch. Emil Jahoda New York, N. Y. An improved electric welding torch having means for gripping a welding rod, means for conducting an electric current to said rod, and a circuit-breaker automatically operated to cut off the electric current when the grip on the welding rod is released.





1,341,086.

1,341,016. Thermostatic Valve. Paul Mirk, New York, N. Y. An air valve having a U-shaped thermostatic device comprising a tubular member closed and externally screw-threaded at one end, and provided with an internal perforated seat at the opposite open end, a gasket arranged within said open end and bearing on said seat, and a terminal piece fitted into said open end and bearing against the gasket.

1,341,086. Pipe Connection. Peter Paul Theisen, Chicago, Ill. In a device of the class described, a countersunk roof drain box and depending pipe section, in combination with a tubular connecting member having an annular groove in one end for the reception of one end of said pipe section, said pipe end being adapted to fit snugly against one wall

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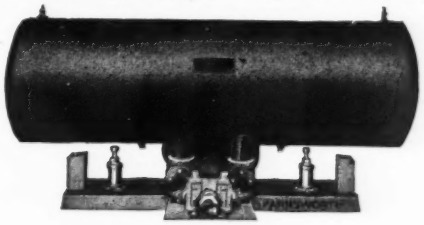

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Style O—Heavy rough pattern built for service.

STYLE N — Both shown in catalog D — STYLE O

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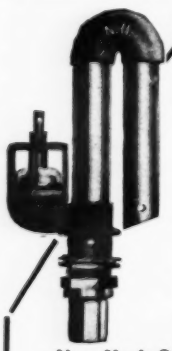

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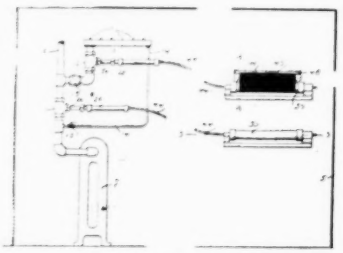
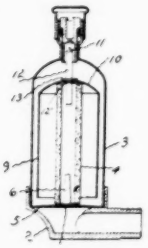
Exeter, N. H.

New York Office: 50 Cliff St., Henry Stein, Rep.

of said groove; a transversely extending flange provided on said end of said pipe section; and an annular locking member in threaded connection with the other wall of said recess and engaging over said flange of said pipe for locking said pipe and connecting member together, substantially as described.



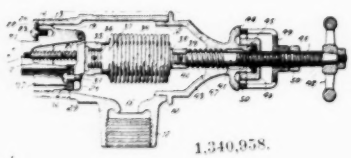
1,340,939.



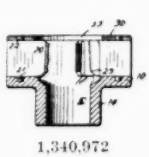
1,341,101.

1,340,939. Relative Humidity Controlling Means. Clifford A. Cutler, Buffalo, N. Y. In a drying kiln, relative humidity controlling means comprising heating means, a source of moisture supply, a temperature controlling valve for regulating the temperature of the air in the kiln, a humidity controlling valve for regulating the humidity of the air in the kiln, an expansion chamber, containing fluid, for each of the valves, means connected with the expansion chambers for controlling the valves by fluid pressure, and a moist wick surrounding the expansion chamber of the humidity controlling valve.

1,341,101. Air Valve Device. Allan J. Beaton, New Britain, Conn., assignor to the A. J. Beaton Manufacturing Co., New Britain, Conn., a corporation of Connecticut. An element for use in an air valve device, having a part extended through it, a portion of the extending part having a rigid portion fitted substantially against one surface of the element, and the extending part being also shaved to fit against the other surface of the element to hold the extending part in rigid relation with the element.



1,340,958.



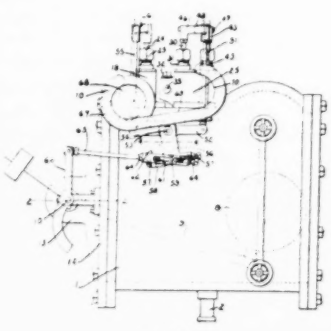
1,340,972

1,340,958. Steam Trap. Frank B. Jones, Altoona, Pa. A steam trap comprising a main casing to be connected with a radiator and a drain pipe, a plug screwed into the inner end of said casing and having a through passage at its lower side and a valve hinged at its upper end and carrying packing adapted to close said passage, and a thermostat within said casing adapted when in its expanded state to maintain said valve closed.

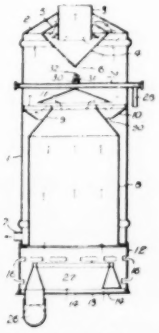
1,340,972. Diestock. Ira W. Nonneman, Warren, Ohio, assignor to the Borden Company, Warren, Ohio, a corporation of Ohio. In a die stock, the combination, with a frame having chaser guideways adjacent to one face and a sleeve portion adjacent to the opposite face, a removable cover plate for said guideways, removable chasers occupying the guideways and having shoulders on their top and bottom edges, and means adapted to engage said shoulders for locking the chasers in place either edge up.

1,341,027. Steam Trap. William R. Templeton, Boston, Mass., assignor to Templeton Manufacturing Co., Boston, Mass., a corporation of Massachusetts. In a steam trap, the combination with a casing having an opening in its bottom through which water from a heating system may enter the

casing, and through which the water in the casing may be discharged, said casing having at its top a steam inlet, a water inlet, and an air vent outlet, a steam valve for the steam inlet, a water valve for the water inlet, and an air valve for the vent, a float in the casing, and connections between said float and said valves whereby when the float is raised the steam valve is opened and the water and air valves are closed, while when the float is lowered, the steam valve is closed and the water and air valves are opened.

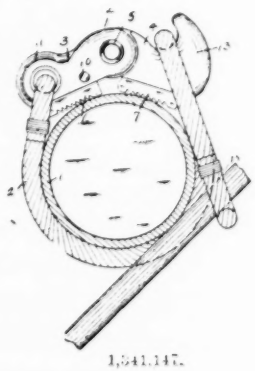


1,341,027.

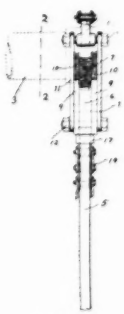


1,341,048.

1,341,048. Water Heater. Emile Drevet, Montreal, Quebec, Canada. In a water heater, the combination of a casing; a burner in the lower portion thereof; a water supply pipe in the upper portion of the casing having means for discharging the water in spray form; a hollow, inverted conical deflector located within the casing immediately above said water discharging means and against which the water spray is directed; means within said casing for directing the heated products of combustion toward the spray; and a tubular outlet member mounted in the top of the casing immediately above said deflector and extending downward thereinto, whereby said products of combustion, after passing through the spray, are caused to enter and pass through the deflector and to escape there from through said tubular outlet member.



1,341,147.



1,341,069.

1,341,147. Pipe Grip. Daniel E. Norris, Robinson, Ill., assignor of one-half to Frank H. Norris, Robinson, Ill. A pipe grip comprising sections pivotally secured together and having pipe engaging surfaces, the grip being provided at one end of one of the sections with means for securing a flexible pipe encircling element and at the end of the other section with a hook over which the element may be placed, whereby pressure is exerted on the ends of the sections thus forcing the engaging surfaces into engagement with the leverage of the sections operating on the pivot as a fulcrum.

1,341,069. Pipe and Flange Wrench. Elmore W. Orr, Minneapolis, Minn., assignor of one-half to William J. Anthony, Minneapolis, Minn. A wrench of the kind described

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The Holmberg Vacuum Vapor Steam Trap, attached to any single pipe steam job, will eject all the air. Save 30% in fuel, and increase the efficiency 30%.
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WASHINGTON	TOLEDO	ALTOONA	DALLAS	DETROIT
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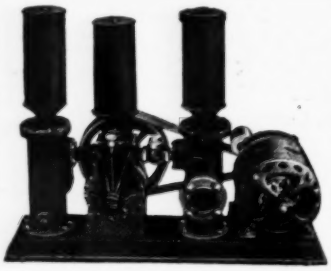
Crescent Brand Tubing is used exclusively in Wheeler Condensers. It is of special value to the plumbing trade. When QUALITY tubing is wanted always specify CRESCENT Brand.
Wheeler Condenser & Engineering Co., Carteret, N. J. 47



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Simple, sturdy, silent.

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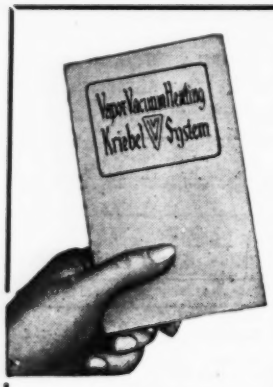

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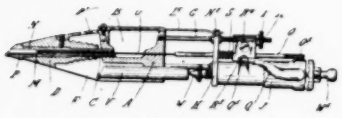
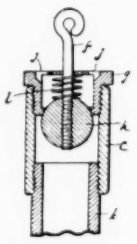
comprising a lever, intermediate and outside plates rigidly secured to said lever and provided with reversely oblique serrated edges, the serrated edges of said outer plate projecting beyond the serrated edge of said inner plate, a pair of links pivotally connected to said plates with their free ends projecting beyond the said plates so that the said links may swing from one side to the other of the head made up of said serrated plates, a chain connected to the free ends of said links, and means for anchoring the free portion of a chain to said lever.

Plumbing Department.

1,341,497. Hand Soldering Tool. Samuel Davies, Eltham, England. In a hand soldering tool, a frame, a reservoir for receiving solder, means for fusing the solder and heating the bit, a swivel lid to said reservoir, an actuating arm on said lid, a catch on the frame to engage said arm, a tubular channel for receiving the melted solder, a valve-rod extending through said channel to the nose of the bit, and a valve formed at an intermediate point on the valve-rod, said valve being longitudinally channeled to provide a passage for the solder.



1,341,497.



1,340,999.

1,340,999. Float Valve. Louie Glenn Wilson, Morning Sun, Iowa. In a float valve, a pipe coupling adapted to receive an externally threaded tubular valve seat, a perforated end closure consisting of a plate having a central guide opening therein at the upper extremity of said valve seat, a spherical valve of greater diameter than the interior diameter of said valve seat but of lesser diameter than the interior diameter of said pipe coupling and provided with a valve stem which projects upwardly through the guide opening in the perforated end closure of said valve seat, a spring interposed between said end closure and said valve adapted to open said valve, a float adapted to close said valve against the resistance of said spring, means connecting said float with said valve stem.

HOT WATER SUPPLY AND CIRCULATION TO OLD COLONIAL MANSION.

(Continued from Page 493.)

back of the faucet. The boiler pressure, however, does not drop so much. Therefore, water will flow to the faucet through the hot flow pipe and also through the return pipe, if it can."

"Correct, old man, if it can," Jones interrupted.

"But it can't go back through the return line because of the check. Therefore, all water drawn at any hot water faucet must come direct from top of boiler," continued Si.

"Correct again, boy," said Jones proudly slapping him on the back. "A few more lessons and you'll be a sanitary engineer."

Si only grinned.

"I got the idea of your circulation work all right now," continued Si, "but I don't see much use of the regulator. I say let the thing heat all it wants to. If the water comes too hot, they can cool it down with cold water."

Jones smiled.

"Bright idea, Si—a very bright idea," he said, "but what if the hot water comes too cold?"

Si rubbed his chin vigorously. He was thinking hard. Finally he asked: "Why the attendant has to keep his fire going, hasn't he? That's what he is paid for!"

"He would have a steady job then attending the heater," said Jones. "Hot water is not drawn steadily from a boiler. Some times there is a great demand for hot water. At other times there is practically no demand at all. This means that if the attendant checks his dampers and fires steadily, the water will become too hot at certain times and too cold at other times. As fate usually runs things of that kind Adams would want a hot bath in a hurry when there was no hot water in the boiler, then what?"

Jones looked to Si for an answer. Si shifted around a little and rubbed his chin again. "Then our goose would be cooked, I guess," he frankly admitted.

"You bet it would," Jones emphasized positively, "and what is more, I'm running no risks in that line. That's why we will install this automatic regulator. It will turn on the drafts automatically and push along the fire when the boiler requires more hot water. It will also shut off the dampers, or check them down when the boiler is hot enough. That's the whole thing in a nut shell. I would rather stake my reputation on a good automatic damper regulator than I would on the best attendant that ever walked in shoes. Yes, sir, that damper regulator goes in and all the attendant has to do is fire up and keep the heater clean. The regulator does the rest. Every body can have a hot bath any time he or she wants it.

"Certain things have to be carefully attended to in the installation of a circulating system. Chief among them is the grading of the lines to prevent air binding. All the work must be installed so that no air can accumulate in any of the circulation lines. If it does, then it stops the circulation. The force, which creates the circulation and keeps it going, is so small that even a small volume of air collecting in a high point will effectively stop circulation.

"Note in the sketch the piping is arranged to relieve all air. Therefore, the lines will always remain full of water and always will circulate when the water in boiler is warmer than the air in the house.

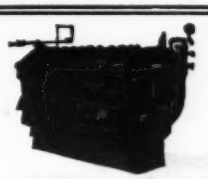
"The circulation is by gravity, pure and simple. The hot water at top of boiler is less dense than the colder water in the return lines. Therefore it rises through the flow lines while the more dense or heavier water in circulation lines returns to the boiler to become re-heated. That's how the circulation is maintained."

"But I observe that the return lines are smaller than the flow lines," Si remarked.

"Yes, they are," said Jones. "In circulation work of this nature the circulation piping requires to be only large enough to circulate the hot water to the extreme end of the circuit; also the branches. Generally speaking, a ½-inch pipe is large enough for any single circuit, but ours is a combination of circuits. We need a ½-inch pipe for each separate branch circuit, and one at the extreme end of the main circuit. These ½-inch return branches all join back into the return, or circulation main. It, therefore, must increase in diameter as it returns back to the boiler or heater. Note that our main return is 1-inch. It takes care of four or five ½-inch branches, and will do it easily. If we continued a ½-inch return main back to the boiler, the nearest branch would short circuit the others. The branches farthest from heater would not circulate, and the job would be a failure.

"Now you have a good idea of the layout," said Jones, "go ahead and ink it in. Good-bye."

(The End.)



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The Apex Supply Co.
Trenton, N. J.

The Apex

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PLUMBERS AND STEAM FITTERS wanted for the Sunny South. Open shop conditions in an open shop town. Wages $1.00 per hour, eight hour day. Must be first class mechanics. Pettit-Galloway Co., 114 E. Seventh St., Little Rock, Ark. tf

SALESMEN—HIGHEST GRADE BRASS goods for plumbing trade, to be carried as side line. Wanted men who know Brass Goods. Territories open are Illinois and Iowa. Liberal commission. Advise references and details. Applications confidential. Address 148, "Domestic Engineering," Chicago. 6-12

FIRST CLASS PLUMBER WANTED, open shop. $1.00 per hour. 8 hour day. Saturday half holiday. Double time for overtime. Steady job for first class man. Thomas J. Shields, 314 E. Michigan Ave., Lansing, Mich. 6-5-12

WANTED—FIRST-CLASS PLUMBERS to work under open shop conditions for large construction work throughout South. Highest wages paid. None but competent mechanics need apply. Address 142 "Domestic Engineering," Chicago. 5-29-6-19

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OPEN FOR MANAGEMENT—MANAGER of full responsibility or as general sales manager. Age 40 years, have long record of success and achievement in difficult matters. 16 years with large manufacturing plant, producing devices in Brass, Iron, Steel, etc., Technical (quasi) a producer, skilled correspondent of especial value to concerns desiring to expand or that have run down and below capacity where sheer ability to accomplish is required. Prefer full charge of medium sized plant, direction of sales, or charge of important branch office, employing above metals in construction, or will engage with any going business, requiring a high grade man. Can organize, systematize, analyze. Address 150, "Domestic Engineering," Chicago. 6-12-19

A COMPETENT SALES MANAGER, sales executive, desires to get in touch with manufacturers, wishing to increase their output, in the New York or Pacific Slope fields, 20 years' experience in Steam, Water and specialties. Over 15 years with one large concern. Can successfully market any meritorious device, a producer of real worth. Capable of handling technical subjects. Will organize a staff if necessary. Location either point named above. At liberty now. Salary and bonus arrangement desired. Address 151, "Domestic Engineering," Chicago. 6-12-19

For Sale

FOR SALE—15,000 BRASS FAUCETS, ½ in., in lots of 500 or more. Techno-Service Corp., 410 W. 27th St., New York City. 6-12

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TIME SHEETS, JOB TICKETS, ESTIMating blanks, illustrated stationery, blotters, etc. For plumbers. Reasonable. Send for catalog and price list. Prompt service. P. Fink & Sons, 56 N. 7th St., Philadelphia, Pa. 11-22 tf

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Government Proposals

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., May 25, 1920.—Sealed proposals will be opened in this office at 3 p. m., June 21, 1920, for the installation of a new hand stoker, repairs to air washer, etc., in the United States Post Office at Minneapolis, Minn., in accordance with the specification, copies of which may be had at this office or at the office of Custodian at Minneapolis, Minn., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 6-5-12

Treasury Department, Supervising Architect's Office, Washington, D. C., May 26, 1920.—Sealed Proposals will be opened in this office at 3 p. m. June 25, 1920, for workroom ventilating apparatus in the United States Court House and Post Office at Pittsburgh, Pa., in accordance with specification and drawings, copies of which may be had at this office or at the office of the Custodian, Pittsburgh, Pa., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 6-5-12

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., June 2, 1920.—Sealed proposals will be opened in this office at 3 p. m. June 25, 1920, for furnishing and installing a new Brick-set Down draft, Fire box, heating boiler, in the United States Post Office and Custom House, Port Arthur, Texas. Drawings and specifications may be obtained from the Custodian at Port Arthur, Texas, or at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 6-12-19

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., June 2, 1920.—Sealed proposals will be opened in this office at 3 p. m., June 25, 1920, for repairs to heating apparatus in the United States Post Office, at Louisville, Kentucky, in accordance with the drawing and specification, copies of which may be had at this office or at the office of the Custodian at Louisville, Ky., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 6-12-19

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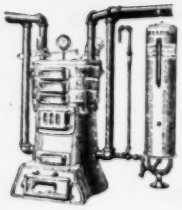

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